DIEHL
Metering

IZAR@SET

User Manual

smart in solutions

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1 General

1.1 Features of IZAR@SET

IZAR@SET is a PC application for the following tasks:

- configuration of meters and system components
- readout of measured values and data storage devices
- saving of data logs
- adjustment of meters

The following devices from different fields of the measurement and system technology can be configured.

Measurement technology for thermal energy:

- SHARKY 775
- SCYLAR INT 8
- RAY Radio

Measurement technology for water:

- HYDRUS
- CORONA ER

Measurement technology for gas:

- AERIUS

System technology

- HYDRO RADIO EXTERN Pulse
- HYDRO RADIO EXTERN RS 232 / L-Bus
- IZAR RADIO COMPACT Inductive
- IZAR RADIO COMPACT 868 ACM
- IZAR RADIO EXTERN SCR
- IZAR RADIO EXTERN M-Bus

1.2 Authorization levels

IZAR@SET can be operated in three different levels.

- **Standard** (Freeware)

Only a few default configurations are possible on this level, e.g. reading of devices and memory areas or to save as CSV-files.

- **Expert** (USB-Dongle)

The whole configuration feature is available on this level (without calibration settings).

- **Test Lab** (USB-Dongle)

Calibration settings can be performed on this level in addition to the whole configuration features.

1.3 System requirements

Supported operating systems:

- Microsoft Windows XP with Service Pack 2
- Microsoft Windows Vista

Full compatibility with Windows 7 / Windows 8 can currently not be ensured.

Restrictions are as follows:

General:

- IZAR@SET can only be installed with administrator rights for the starting of IZAR@ SET no administrator rights are necessary.
- Bluetooth and COM communication may be disturbed or will not work (this problem can be solved by using the recommended Bluetooth-devices under "1.4 Recommended hardware").

The function of IZAR@SET can be limited by network-wide group policies. Consequences are:

- IZAR@SET will not start if it does not have access to his own directory.
- No log file and no database are generated. Data exports are not possible.
- Log files, database and data exports are saved in temporary directories.
- The program settings are lost after each start.

In this case, the network administrator should be consulted.

1.4 Recommended hardware:

- CPU with minimum clock frequency of 2 GHz
- 1024 MB main memory
- 150 MB of available hard disk space
- CD-ROM drive
- Network card for TCP/IP protocol
- Screen with minimum resolution of 1024 x 768 pixels
- Bluetooth interface (internal or external as USB stick) with Widcomm, Microsoft or BlueSoleil stack

Optional hardware components:

- Serial interface (for serial opto head)

If problems occur with your built-in or external Bluetooth device, we recommend using one of the following devices:

- Fujitsu Siemens USB Bluetooth stick V2.1 for Windows XP
- Fujitsu Siemens USB Bluetooth stick V2.0 for Windows 7

1.5 Instructions for the User Manual

This User Manual is intended for trained personnel. For this reason no basic working steps are included.

This User Manual refers to the installation of the software and the configuration of the connected devices.

Characters and symbols

These should help to use the User Manual quickly and reliably.

Indicates important information about the most effective use of the software.

Identifies important information to warn against improper use and possible damage to the meter or to prevent loss of data.

1. ... Lists individual handling instructions.

2. ...

1.6 Warranty

The IZAR@SET software and this manual were developed with great precision and tested extensively for being free of errors. It is quite possible that not detected errors occur here. Hydrometer is not liable for any incidental, indirect or consequential damages whatsoever regarding this product, the use of this product or the inability to use this product. Included are damages from operational disruption, interruptions in production, personal injuries, loss of business information or of data or from any other financial loss without limitation. In general the liability is restricted to the amount paid at the time of purchase.

1.7 Customer support

You can contact our customer support team as follows:

Hydrometer GmbH
Industriestraße 13
D-91522 Ansbach
Fon: ++49 (0)981-1806-0
Fax: ++49 (0)981-1806-615
info@hydrometer.de
www.diehl.com/metering

A company of the division Diehl Metering

2 Installation

2.1 Download of the installation file from the home page

You can download the IZAR@SET installation file from our homepage. Please enter the following address in your browser:

http://www.diehl.com/en/diehl-metering.html

Under the heading "Products & Solutions" \ "Product-Download" an overview opens, where you can select the following.

1. Select a partner = "Hydrometer"
2. Select a product = "Metering Systems\IZAR@SET"
3. Select a category = "Software"

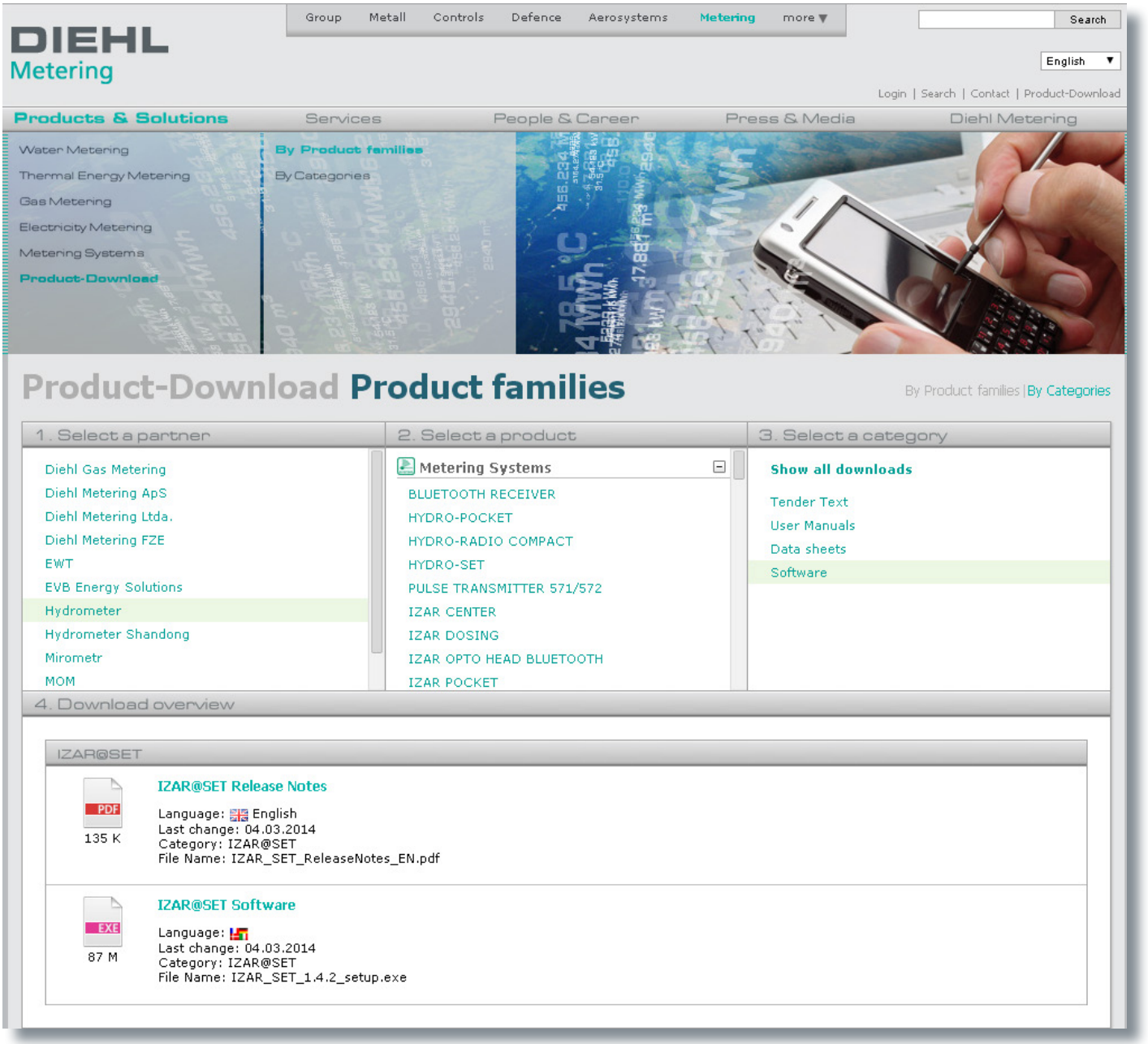


Fig. 1 : Download section of home page

4. Download overview

- Now select "IZAR@SET Software", in order to save the installation file on your local hard disk.

2.2 Installation of IZAR@SET

1. Double click the installation file to run the installation.

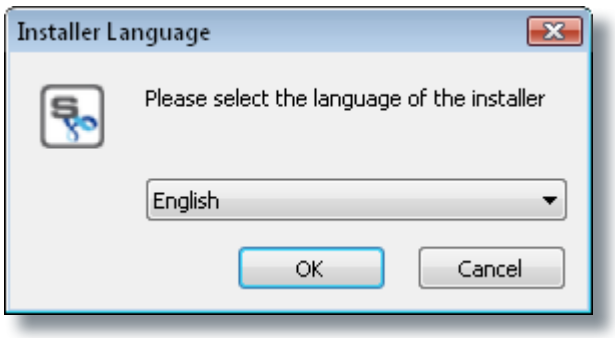


Fig. 2 : Installation - Language selection

2. Select the desired language for the installation in the pull down menu and confirm with <OK>.

IZAR@SET Setup: License Agreement
Please review the license agreement before installing IZAR@SET. If you accept all terms of the agreement, click I Agree.
By opening the seal of the enclosed CD the Customer accepts the conditions of the following
Softwaretransfer- and licence Contract
as binding upon himself. This shall not apply if he returns this CD undamaged, and without having made any copy
Cancel
DIEHL Metering
I Agree

Fig. 3 : Installation - License Agreement

3. Please read the license agreement before you install IZAR@SET. If you accept all the conditions of this agreement, click <I agree>.

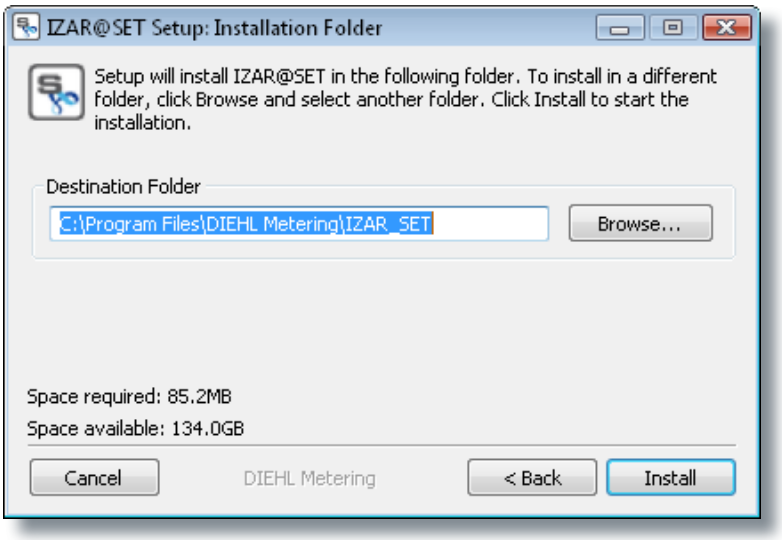

IZAR@SET Setup: Installation Folder
Setup will install IZAR@SET in the following folder. To install in a different folder, click Browse and select another folder. Click Install to start the installation.
Destination Folder
C:\Program Files\DIEHL Metering\IZAR_SET
Browse...
Space required: 85.2MB
Space available: 134.0GB
Cancel
DIEHL Metering
< Back
Install

Fig. 4 : Installation - Folder

4. Select now the directory where you want to save IZAR@SET and run the installation by clicking on <Install>.

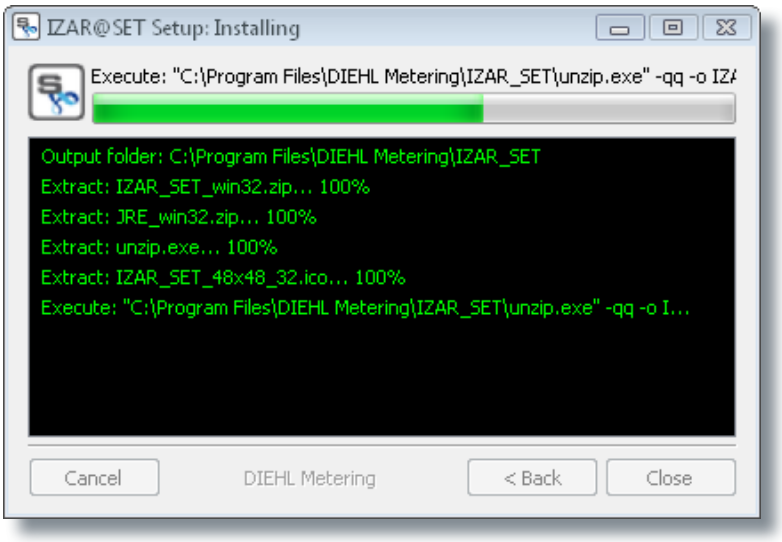


Fig. 5 : Installation history

5. After the installation click <Close>.

Software update

Use an update of the software IZAR@SET so that you can always benefit from all extensions of the software.

3 Starting and configuring the software

3.1 Starting IZAR@SET and logging in users

1. Start IZAR@SET from the start menu of your computer.

Fig. 6 : IZAR@SET Login screen

When you have purchased an USB dongle with the authorization to work in the "Expert" or "Test Lab" mode, you have to insert the dongle into the USB port of your computer and leave it inserted during working with IZAR@SET.

2. Log in with the following user data:

username: **admin**

password: **radio**

3.2 Communication

You have to establish a connection between your computer and the reading device if you want to work with IZAR@SET.

The following options for connection are available:

- via a Bluetooth opto head
- via a serial opto head

Please refer to the separate instruction manuals of the opto head or the device which has to be read.

3.2.1 Setting up a Bluetooth opto head

If you have a PC or laptop with an integrated Bluetooth interface, you have to install a USB Bluetooth stick.

Installation of USB Bluetooth Adapter

1. Insert the USB Bluetooth stick into the USB port of your computer.
2. Install the driver software automatically or use the enclosed CD.

Adding of Bluetooth device (opto head)

1. Switch on the opto head.
2. Start the control panel of your computer.
3. Select the Bluetooth device settings.
4. Add a new wireless device to your PC. Do this by selecting the opto head which is already known by your PC.
5. If required add the connection pin "0000" for the opto head.

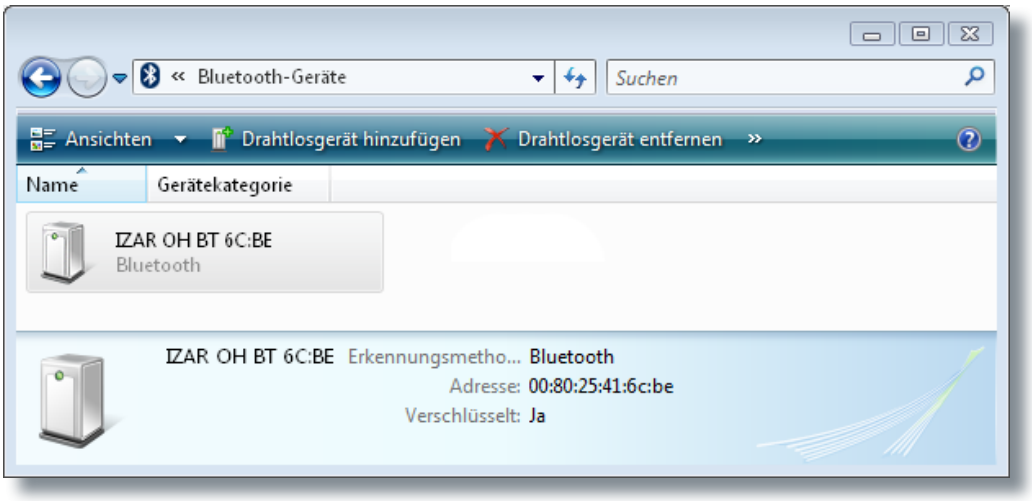


Fig. 7 : Wireless devices

6. Select the properties of the opto head (right mouse button) and show tab <Allgemein> or <Dienste>.

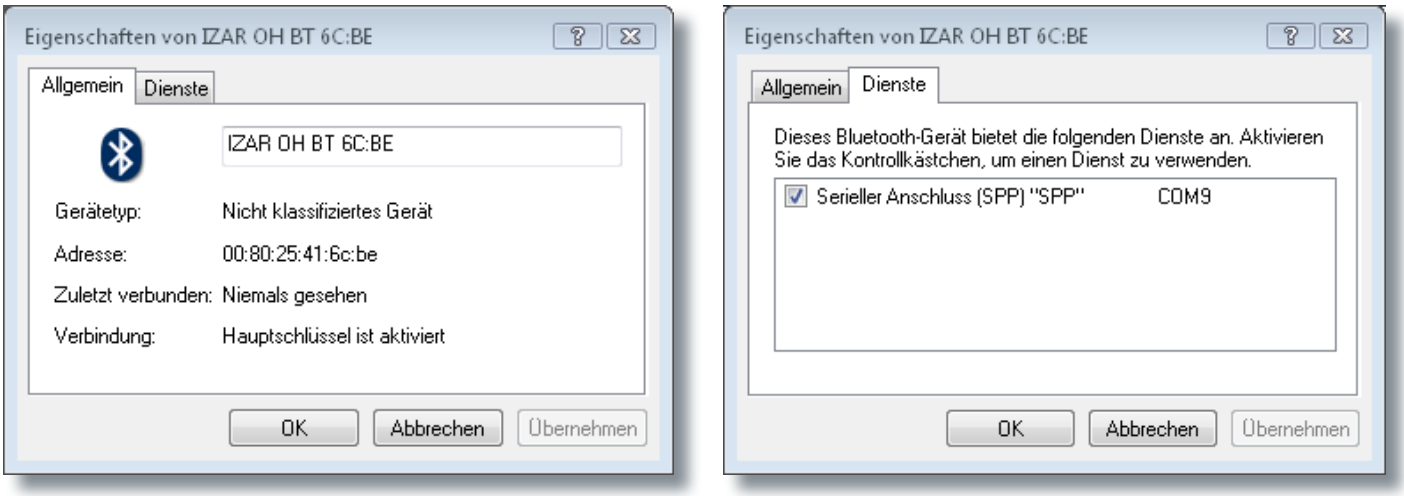


Fig. 8 : Properties of the wireless device

7. Note the address or the serial interface.

3.2.2 Setting up a serial opto head

If you use a serial opto head to readout your device, you have to set up the connection as follows:

Only IRDA opto heads are supported.

- Connect the serial opto head to a serial port of your PC or Laptop.

3.2.3 Assigning an opto head

To set up a connection to a device, you only have to assign the opto head to the software IZAR@SET.

Fig. 9 : IZAR@SET Start screen

1. Click <Preferences> and select in the following window <Communication>.

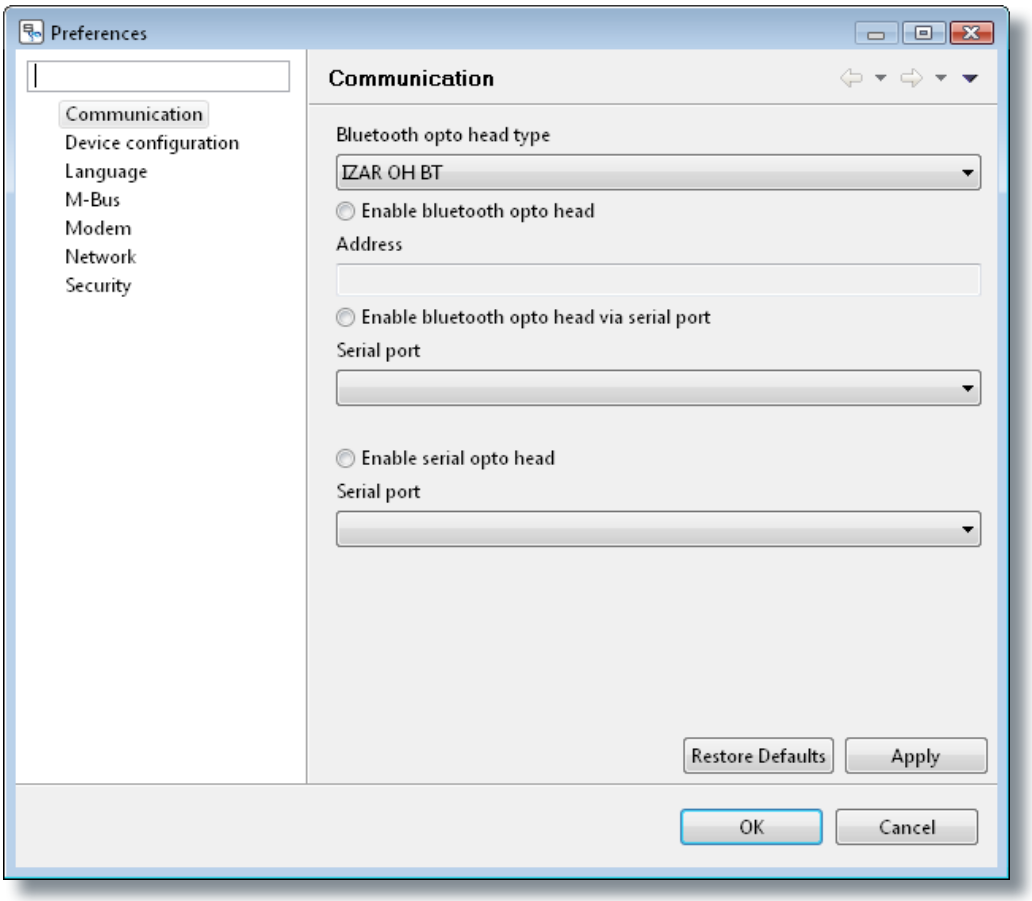


Fig. 10 : Preferences - Communication

Assigning a Bluetooth opto head

1. Select the type of your opto head in the pull-down menus.
2. Enter the address of the opto head or assign the interface (see 3.2.1).
3. Confirm the selection by clicking <Apply> and close the window by clicking <OK>.

Assigning of serial Bluetooth opto head

1. Select <Enable serial opto head>.
2. Assign the interface via the pull-down menu.
3. Confirm the selection by clicking <Apply> and close the window by clicking <OK>.

3.3 Preferences

You can configure general settings for IZAR@SET via the tab <Preferences>.

3.3.1 Device configuration

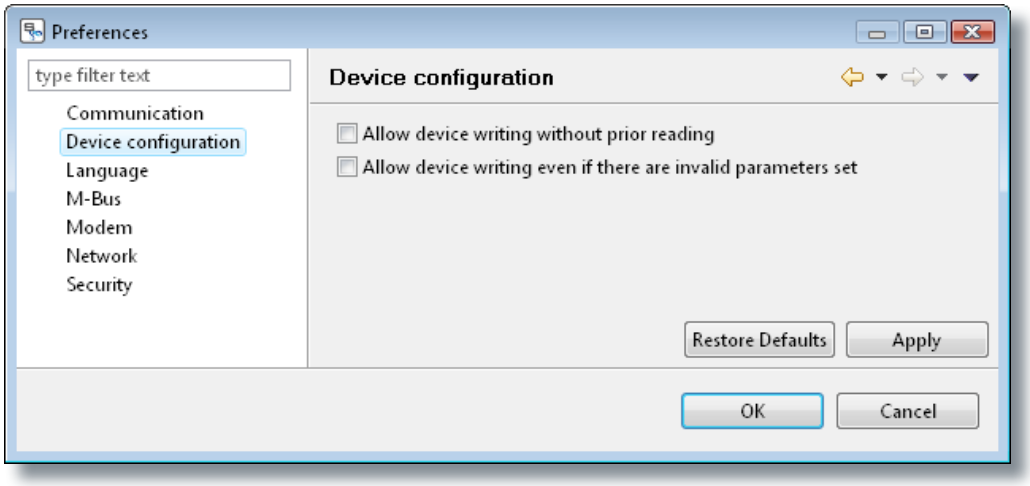


Fig. 11 : Preferences - Device configuration

Allowing writing of devices without prior reading

- It is sometimes necessary to configure a number of identical devices with the same settings. Activate this function to eliminate the reading of each device and to speed up the processing.

Allowing writing of devices if invalid parameter states exist

- Writing a device is not possible, if there are still errors on individual tabs. This function explicitly allows writing despite the existence of errors. You will be notified of the error.

3.3.2 Network

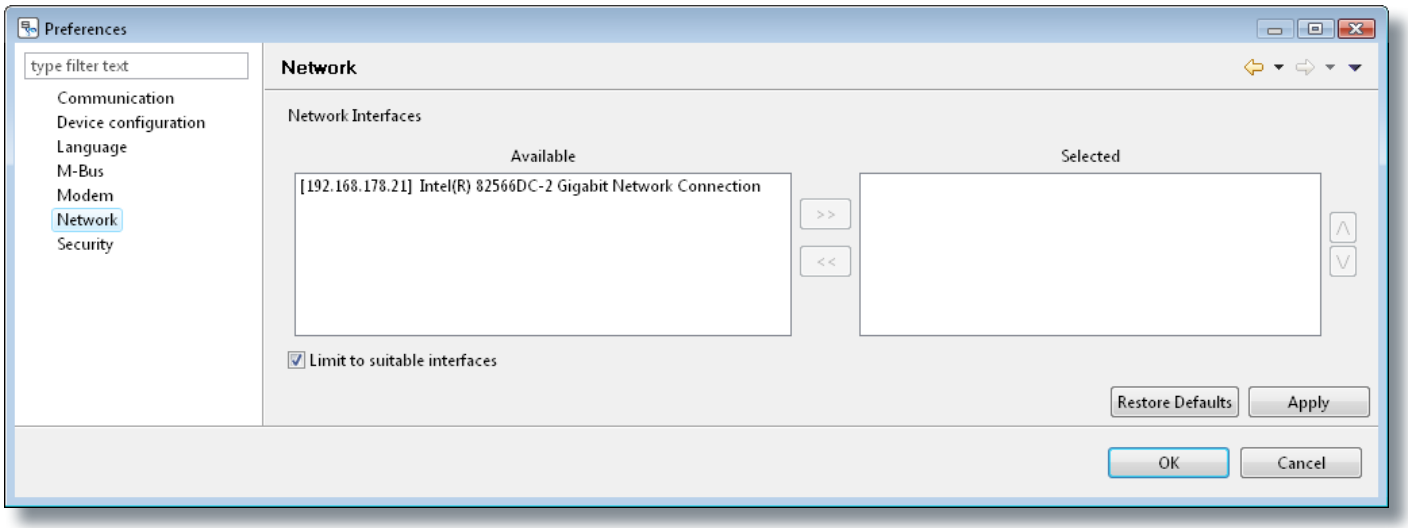


Fig. 12 : Preferences - Network

- Select the network card for the configuration of IZAR@SET (if there are several network cards installed on your PC).

3.3.3 Security (only expert mode)

This menu is used to change the password for the optical interface and the radio key of the device.

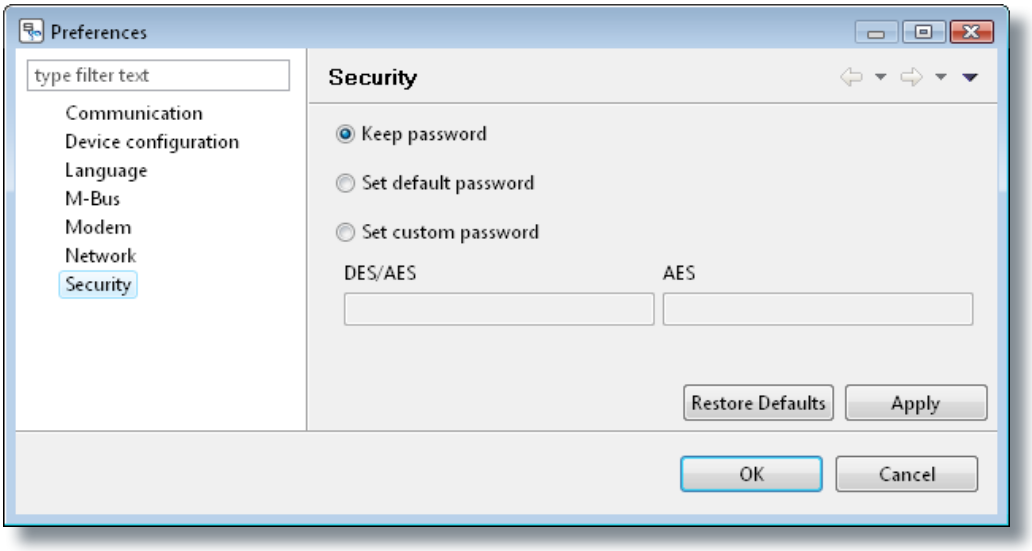


Fig. 13 : Preferences - Security

Before the following changes are performed, you have to readout the meter by means of IZAR@SET. Then you can adopt the changes by choosing the option "Write" as described below.

The radio key is used to encrypt transmitted radio data.

The same key is used by IZAR@MOBILE and IZAR@NET for decrypting of encrypted data.

Keeping radio key / password for optical interface

- The radio key and the password for the optical interface of the device are kept.

Setting radio key / password for optical interface to default

- If activated, the radio key and the default for the optical interface on the device are rewritten to the default values.

Setting own radio key / own password for optical interface

- If activated, the indicated radio key and the password for the optical interface on the device are rewritten.

The length of the password to set depends on the terminal equipment. You will find the corresponding information in the instruction manual of the corresponding terminal equipment.

The devices use the different encryption standards DES and AES:

- DES (16-digit hexadecimal password)
- AES (32-digit hexadecimal password)

IZAR@SET allows also the input of a shorter password. In this case the other digits are completed with the corresponding digits of the Hydrometer default password.

Please keep in mind, that the radio receivers and software products have to be equipped with the corresponding radio key.

3.3.4 Language

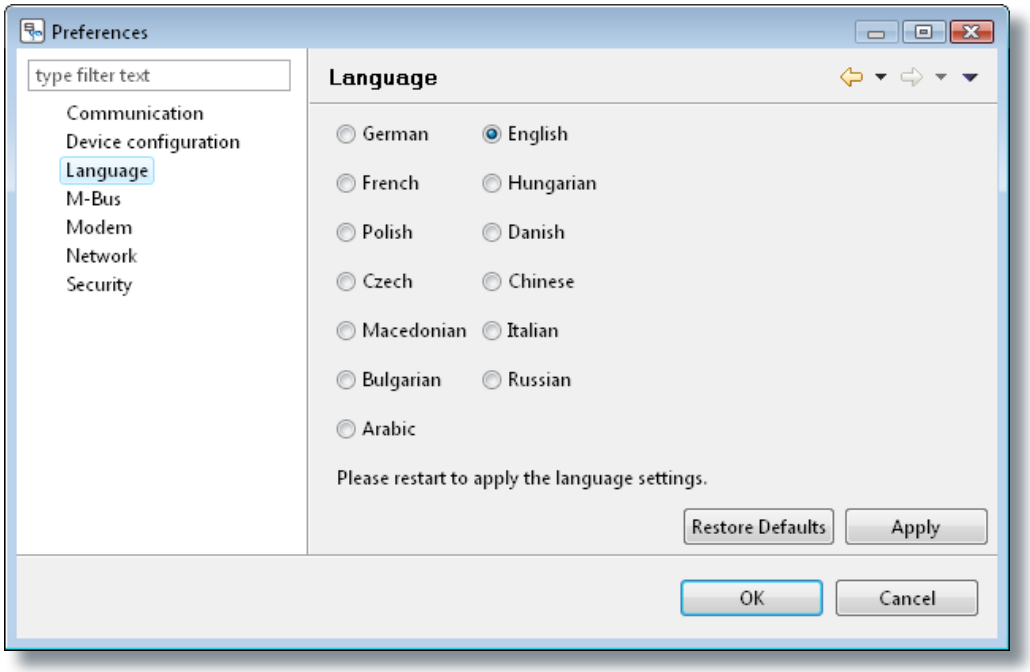


Fig. 14 : Preferences - Language

- You can change the language of dialogues and texts displayed in IZAR@SET.

After changing the language IZAR@SET has to be restarted for the change to become effective.

3.4 Connecting devices to IZAR@SET

Before you read out a device with IZAR@SET, please read the corresponding operating instructions of the device and the used opto head.

1. Switch on the opto head.

2. Place the opto head on the optical interface of the device to be read out.

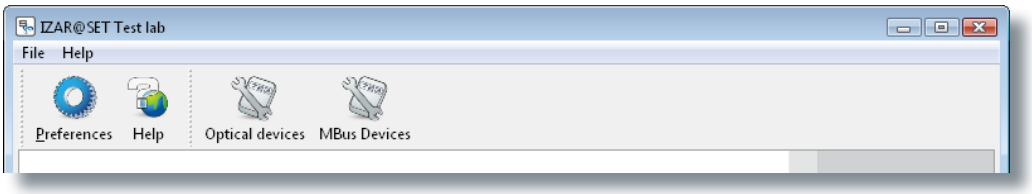


Fig. 15 : Loading optical devices

3. Select <Optical devices>, to read out the corresponding device.

The running process can be aborted by clicking the red button (next to the progress bar).

Depending on the read device, the interface of IZAR@SET changes corresponding to the device-specific properties.

4 Structure of IZAR@SET

All display screens displayed in this chapter only serve for the purpose of information about working with IZAR@SET.

Detailed descriptions of contents and features of device-specific display screens can be found in the respective chapters.

4.1 User interface

After you have IZAR@SET connected to a device and loaded this device, a device-specific interface appears.

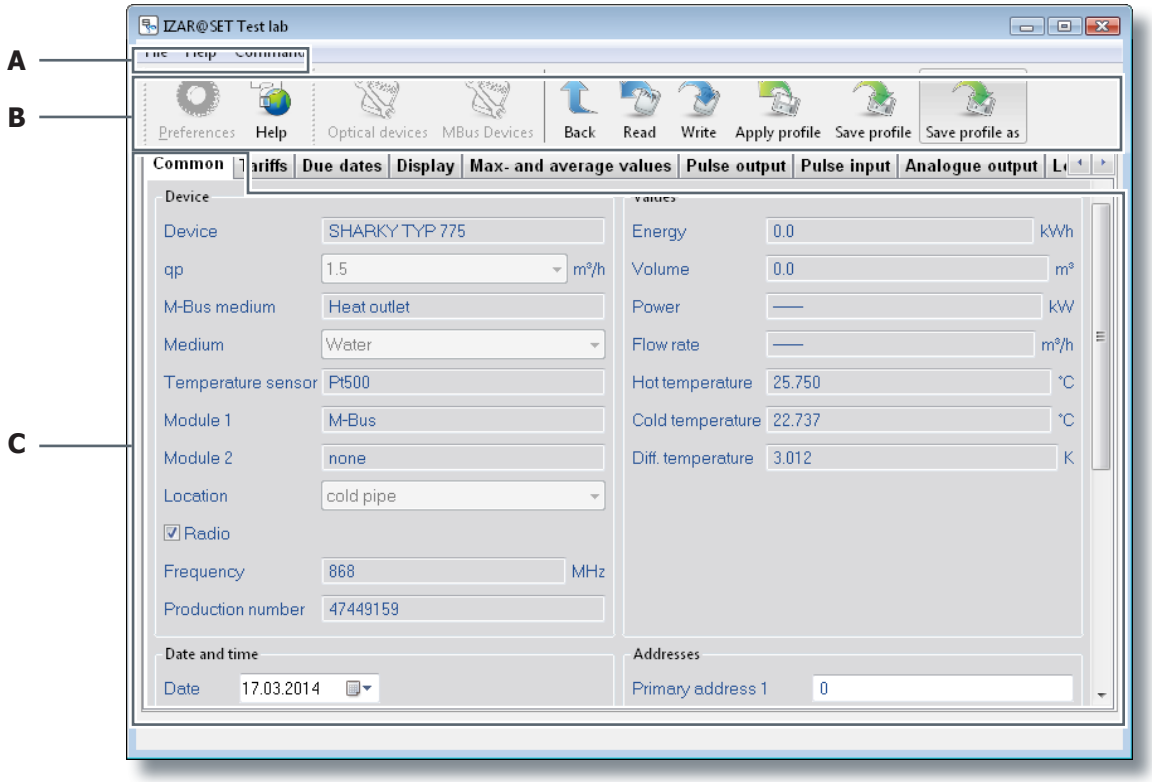


Fig. 16 : Example for user interface

A menu bar

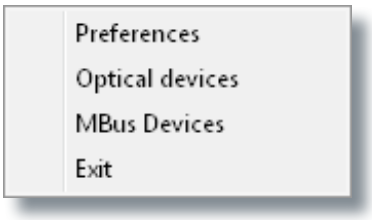
B toolbar

C tabs

4.2 Menu bar

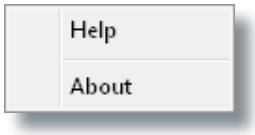
You can open the following menus using the menu bar.

File

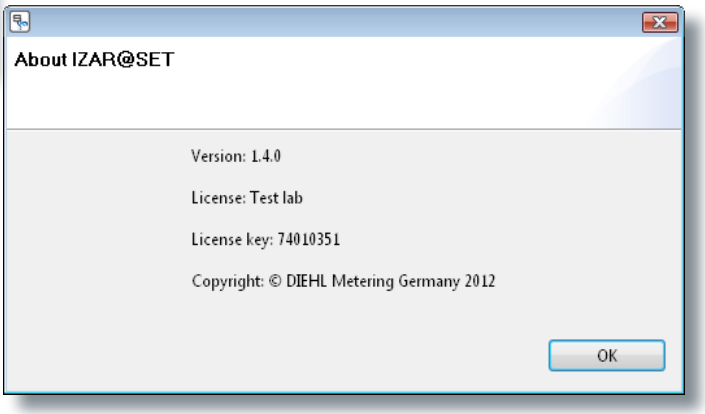


- Click <Exit> to close IZAR@SET.

Help



- Click <Help> to open the User Manual in PDF format.
- Click <About> to show the version status of IZAR@SET.



Please always download the latest version of the software IZAR@SET.

Command

Command	Description
Back	Back to the main menu
Read	The device is read again
Write	Writes changes to the memory of the device
Apply profile	Here you can select a stored profile of a device configuration. The settings from this profile are applied to the current device.
Save profile	The current configuration of the device is transferred to the selected profile, if a profile is available.
Save profile as	The current configuration of the device is transferred to a new profile.
Delete profile	The current profile is deleted.

Depending on the optical device to be read out, you have an additional selection of different commands.

You can find further information in the descriptions of each device.

Deleting of dates is only possible in the Expert or Testlab mode.
In addition, the read out device has to support this feature.

Further information about working with profiles can be found under "5.2 Working with profiles" on page 23

4.3 Toolbar

The icons in the toolbar allow direct access to frequently used features of IZAR@SET.

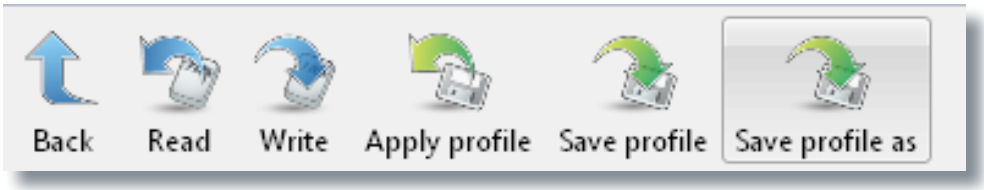


Fig. 17 : Toolbar

The description of the individual commands can be found under "Command" on page 20.

4.4 Tabs

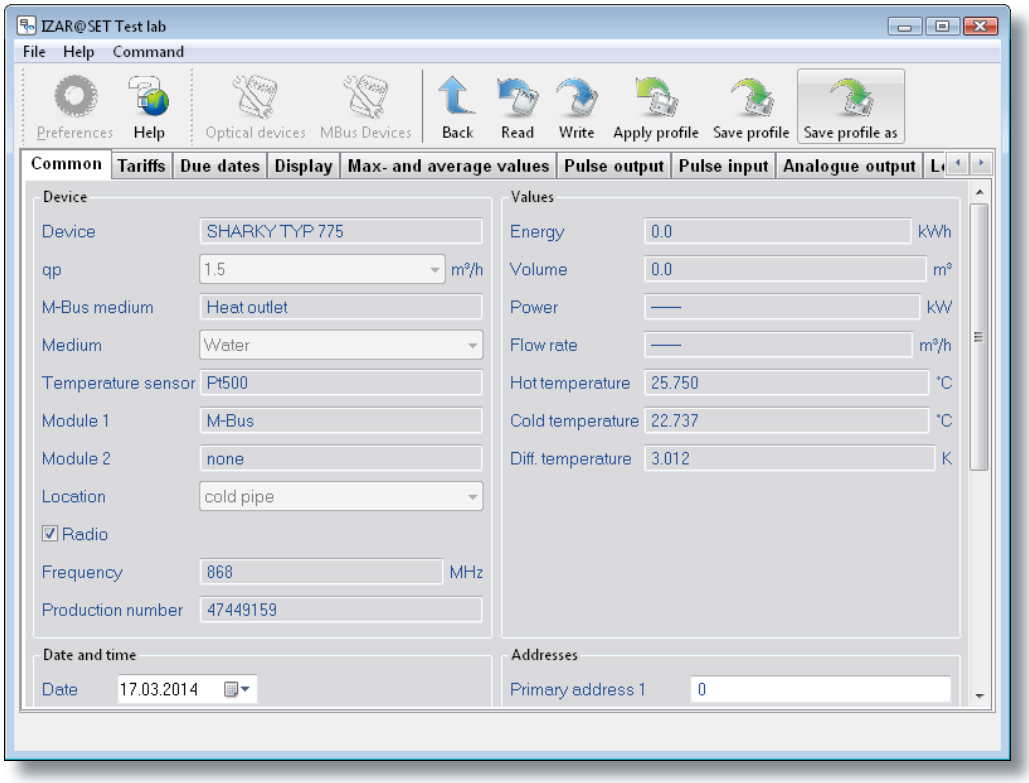


Fig. 18 : Tab

The information read from a device is grouped and displayed in various tabs.

You can show them by clicking on the title of the individual tab.

By clicking on the navigation buttons you can show further tabs, which are not always shown.

5 Working with IZAR@SET

Depending on the acquired license for IZAR@SET you can carry out configurations for the individual devices in different authorisation levels.

- **Standard** (Freeware)

Only a few default configurations are possible on this level, e.g. reading of devices and memory areas or to save as CSV-files.

- **Expert** (USB-Dongle)

The whole configuration feature is available.

- **Test Lab** (USB-Dongle)

Calibration settings can be performed on this level in addition to the whole configuration features.

5.1 Device configuration

The following requirements must be met before configuring a device:

- IZAR@SET is started and you have logged in with your user name.
- The opto head is set and switched on (check charge status).
- The opto head is placed on the optical interface of the device to be read out.
- The optical device was read out in IZAR@SET.

Now you can start to change the parameters of the device. Every change is checked to prevent invalid inputs or the consequences for dependent parameters.

In the event of an invalid input, the corresponding field will be marked in red and you receive additional info via the button ?.

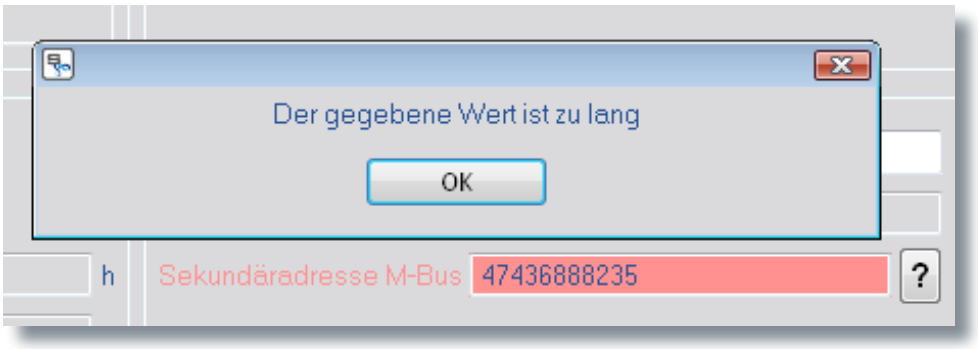


Fig. 19 : Invalid entry

You can make any changes, whereby the changes are only saved by using the command "Write".

Please make sure that during configuration the opto head is connected to the device and is switched on or connected to the PC.

Save configuration

- If you have checked and finished all inputs, click the command "Write" to save the configuration.

Configuration of further devices

If you want to configure more devices, you have to finish the present configuration and return to the main menu.

- Place the opto head on the optical interface of the new device to be read out and start reading out.

5.2 Working with profiles

To configure many devices with the same settings, you can save settings for each type of device as a profile. One profile contains only the changed parameters.

Save profile

1. Read the device
2. Device configuration
3. Click the command "Save profile as" (only the changes made are logged and saved as a profile.

You can also extend a profile afterwards. Carry out the device changes required for the extension and save these under the existing profile.

The profile is saved in the software and can only be used there.

Apply profile

1. Reading the device
2. Click "Apply profile", select the required profile and confirm with <OK>.

The modifications are made to the device according to the selected profile.

3. Eventually click <Write> for saving the transferred data.
4. Click also <Read>, to check the saved data.

Profiles can only be applied on devices of the same generation.

If you have selected the command "Device configuration" - "Allow device writing without prior reading" under User Preferences, then you can adopt a profile for the connected device without prior reading. At least one device has to be read previously, since the command "Profile" can only be executed from the device view.

Delete profile

Profiles which you don’t need anymore can be selected and deleted individually.

1. Select the command "Delete profile".
2. Select desired profile (if there are more than one).
3. Confirm delete with <OK>.

6 Licences

6.1 License agreement

By opening the seal of the enclosed CD the Customer accepts the conditions of the following Softwaretransfer- and licence Contract as binding upon himself. This shall not apply if he returns this CD undamaged, and without having made any copy of it, together with all handbooks to the following address (date of dispatch shall suffice):

Hydrometer GmbH

Industriestrasse 13

91522 Ansbach

Germany

In this case he shall be returned all payments made, save a lump sum of € 40 of administrative expenses, which he must otherwise pay.

§ 1 Subject of this Contract

By payment in full of the purchase price the Customer shall acquire

a) title in the hardware sold to him (both media (CD´s) and handbooks)

b) a non-exclusive licence to use the acquired Software "Hydro Radio" in the version most current at the time of it's acquisition, including all and any by then officially edited updates / releases.

Until that time the Customer herewith receives a provisional license otherwise identical with the - final - one lined out above provided, however, he is not late in payment (see Art. 5, b), below).

§ 2 Scope of the Licence; Assignment of Potential Shares in Copyrights to the Licensor

(1) The Customer may employ the Software acquired from the Licensor for the administration of no more than the agreed-upon number of metering devices. In addition, though, he shall be entitled to make one back-up copy. However, any changes or any further development or any other modification of the Software whatever are strictly prohibited, whether done or tried to be done either by the Customer himself of indirectly, through a third party.

Any such attempt immediately and automatically terminates the pertinent license as well as any liability on the part of the Licensor for any defects resulting therefrom. This software may not be sublicensed nor transferred to anybody save with the prior explicit written consent by the Licensor. The decision on whether or not such consent be granted, shall be at the Licensor´s free discretion.

(2) Any attempt at reengineering, decompilation or deassembling the acquired software shall be strictly prohibited. Title in the Source Code strictly and exclusively remains with the Licensor at all times.

(3) Any and all copyrights in ideas regarding specific problems as well as copyrights in specific solutions jointly developed therefore by the Licensor and the Customer shall vest exclusively with the Licensor.

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§ 3 Liability for Malfunctions in the acquired Software

(1) The Licensor shall be liable for the Software`s ability to transform the consumption data feeded into it into a billable form.

The details are set out in the enclosed handbook. Any liability on the part of the Licensor for any damage deriving from avoidable mishandling of the acquired software or from its being used in conjunction with other software not therefore explicitly authorised by the Licensor, or from the - unauthorised - attempt by the Customer at either modifying it in general or at adapting it to a subsequently amended working environment, shall be explicitly excluded. In case such un-authorised software has indeed been employed or such an attempt been made in conjunction with the occurrence of such damage, the burden of proof regarding the causation of such software for the damage in question shall lie with the Customer.

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(3) The Customer must notify the Supplier of a malfunction immediately upon such defect´s discovery, lining out as detailed as possible the nature and extent of such defect. Thereupon the Licensor must remove such defect by either repairing it or by supplying a new part, at his option. After two attempts at removing such defect have not been successful, the Customer shall be entitled to rely on his statutory warranty rights.

Normally, such repair will be carried out simply by providing to the Customer a follow-up release of the original software that no longer contains such defect. The Customer may not reject this method of repair simply because such release, besides removing said malfunctions, also contains new functions or other amendments to the original software originally purchased by him which he is not interested in or which he does not want for any other reason, provided, however, either the functioning of the original software is not seriously diminished thereby or the unwanted extra-functions/amendments cannot easily be removed from such amended version by the Licensor without having a negative impact on its functioning.

(4) The Licensor warrants that the use of the acquired software, as foreseen in this contract, does not constitute a violation of any intellectual property rights of third parties which entitles those persons to either restrain or forbid such use by the Customer, provided such rights were already registered in or for Germany at the time this contract was concluded or that the Licensor otherwise could not have failed to hit upon the existence of such a right within the course of a diligent research regarding such rights.

(5) If the Customer is either actually sued or threatened to be sued by a third party for an alleged violation of Intellectual Property Rights - as lined out under para (4) above - by the use of the Software in question the Licensor shall indemnify and hold harmless the Customer from all damage deriving thereof to the Customer provided, however, that

a) He informs the Licensor thereof forthwith (within one week of the receipt by the Customer of such claim) in writing and that, further

b) The Licensor is granted an all-encompassing authority to conduct the negotiations/litigation with such third party on behalf of the Customer in its own name (representative action)

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Any and all liability of the Licensor shall generally be limited to injuries or death of persons and/or to damage to material things, except as set out hereunder. Any liability for damage of a purely financial nature, in particular for the loss of data or for indemnification for claims raised by the Customer´s own customers based on the - alleged - malfunction of the software shall be limited to a maximum amount equalling the purchase price paid by the Customer for the Software in question provided the Licensor can proof that the damage is due to no more than ordinary negligence on the part of either himself and/or of his vicarious agents.

The period of liability shall be 12 months.

§ 5 Purchase Price and Late Payment

The Price to be paid by the Customer shall be determined in concurrence with the "order catalogue" current at the date when the order is received by the Licensor. However, only the price confirmed by the Licensor in writing shall be final and binding on both parties, unless it differs from the one indicated in the catalogue and the Customer rejects the contract on this ground within 3 days after receipt of such confirmation (Outside Europe: 5 days) in writing. Delay of payment results in

a) interest to be paid in the amount of 8 % above the base rate charged by the (European Central Bank) ECB from time to time, and in

b) the automatic stay of the Customer`s right to use the Software (licence).

§ 6 Confidentiality

Neither Party shall in any way make available any information of a confidential nature obtained within the course of this agreement nor shall either Party use any of the information thus obtained for any purpose other than the one herein described, and in particular not for own purposes. They shall both obligate all of their employees who will likely get into contact with such information likewise unless such an obligation is already contained in either their employment contracts or in any other side-contract concluded with them. The foregoing obligations are subject to the usual reservations.

Neither Party may make any public reference (which is not totally ancillary) to the other Party by name with regard to the use or sale of the Software by the other Party without such other Party`s prior written consent.

§ 7 Parol Evidence

Any amendment to this contract, including any amendment to this clause, shall only be valid if made in writing. This shall also apply to ancillary or supplementary agreements

§8 Applicable Law and Competent Forum

(1) This contract shall entirely be governed by the laws of Switzerland without th e Swiss provisions on conflict of laws

(2) Any and all disputes arising out of or in connection with this contract shall be exclusively decided by arbitration according to the rules of the German Arbitration Institute by one arbitrator, the proceedings to be held at Nuremberg/Germany and in the English language. This clause shall not be deemed to prevent either party from seeking injunctive relief for which the ordinary Courts of Nuremberg shall be exclusively competent.

6.2 Third-party licences

Hydrometer is obliged to inform you that the software you have purchased has not been created exclusively by Hydrometer but in many places draws on software - open source components - available free on the Internet of incorporates theses components in this software package. The transfer of such components is free of charge, but it is mandatory to pass on the respective license conditions on a 1:1 basis to the customer. The respective manufacturers have apparently not taken into account that there are other countries as well as the USA and that it cannot be assumed that English is spoken fluently all over the world. In addition, it is difficult or impossible for users to identify whether or not parts of the individual software packages are such a component or usable separately. We therefore save you and us the printing of all these conditions individually for you here and only provide the respective Internet link, where you can download these conditions. Software package licences:

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- Apache CommonsCodecApache License, Version 2.0 (http://www.opensource.org/licenses/apache2.0.php)
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- Apache log4jApache License, Version 2.0 (http://www.opensource.org/licenses/apache2.0.php)
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- Micrsosoft ActiveSyncMicrosoft ActiveSync License (http://www.microsoft.com/windowsmobile/activesync/activesync42.mspx)
- NSIS Installer NSIS License (http://nsis.sourceforge.net/License)

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7 SHARKY 775 / SCYLAR INT 8

7.1 General

All the settings that can be configured with IZAR@SET in connection with the ultrasonic energy meter SHARKY 775 (firmware version 01.01 / 02.02) or the integrator SCYLAR INT 8 (firmware version 01.01 / 02.02) and the opto head are described in this chapter.

All different contents between Firmware Versions [01.01] and [02.02] are marked accordingly.

The devices are available in three different applications:

- for heat
- for heat with cooling tariff
- for cooling

Depending on the version the images in IZAR@SET may vary.

You will find additional information for the device or the opto head in the separate instruction manuals. If these are not available, you can download them from our homepage.

Please enter the following address in your browser:

http://www.diehl.com/en/diehl-metering.html

Under the heading "Products & Solutions" \ "Product-Download" an overview opens, where you can find all available documents for downloading.

The following requirements must be met:

- Your device is connected to IZAR@SET (for more information refer to "3.4 Connecting devices to IZAR@SET" on page 18.)

7.2 Tabs

This chapter describes which configurations you can execute on which access level.

Depending on the access rights you have:

- read-only access rights 🕮
- writing access ☑

As soon as your device is connected to IZAR@SET, the device-specific tabs are shown.

Depending on individual configurations further definition options are enabled.

If different settings are available, it is also necessary to enter values. In this case, the input fields are marked in YELLOW.

7.2.1 Common

This tab shows general data for the connected device.

Contents

- Device
- Values
- Date and time
- Addresses
- Device state

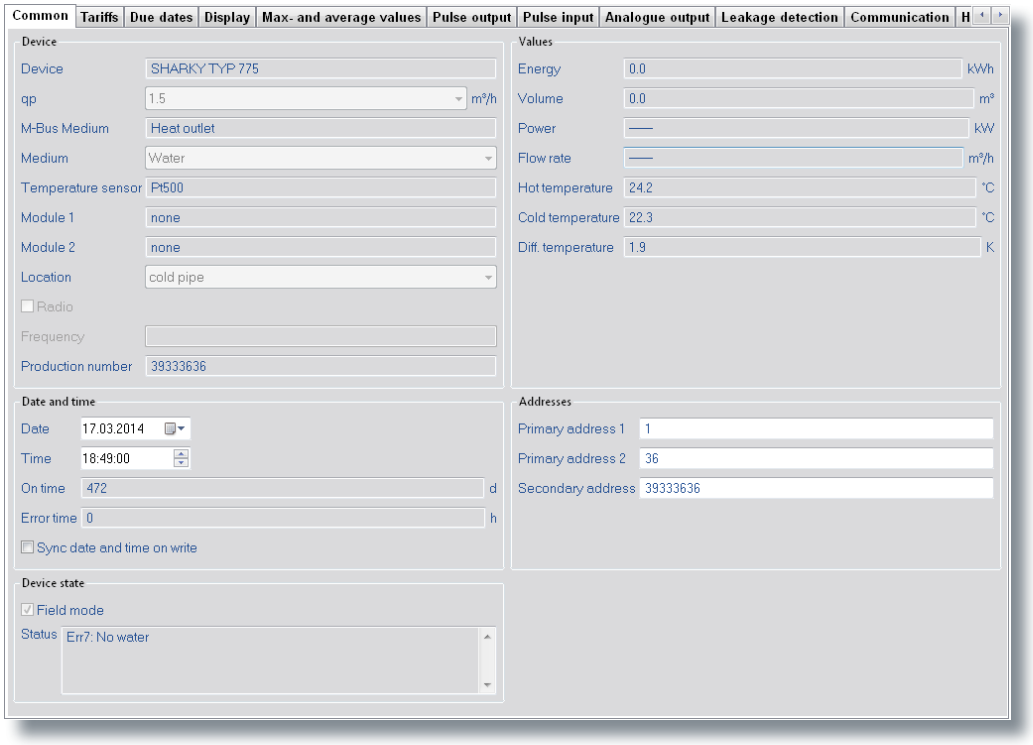


Fig. 20 : Tab "Common" [01.01]

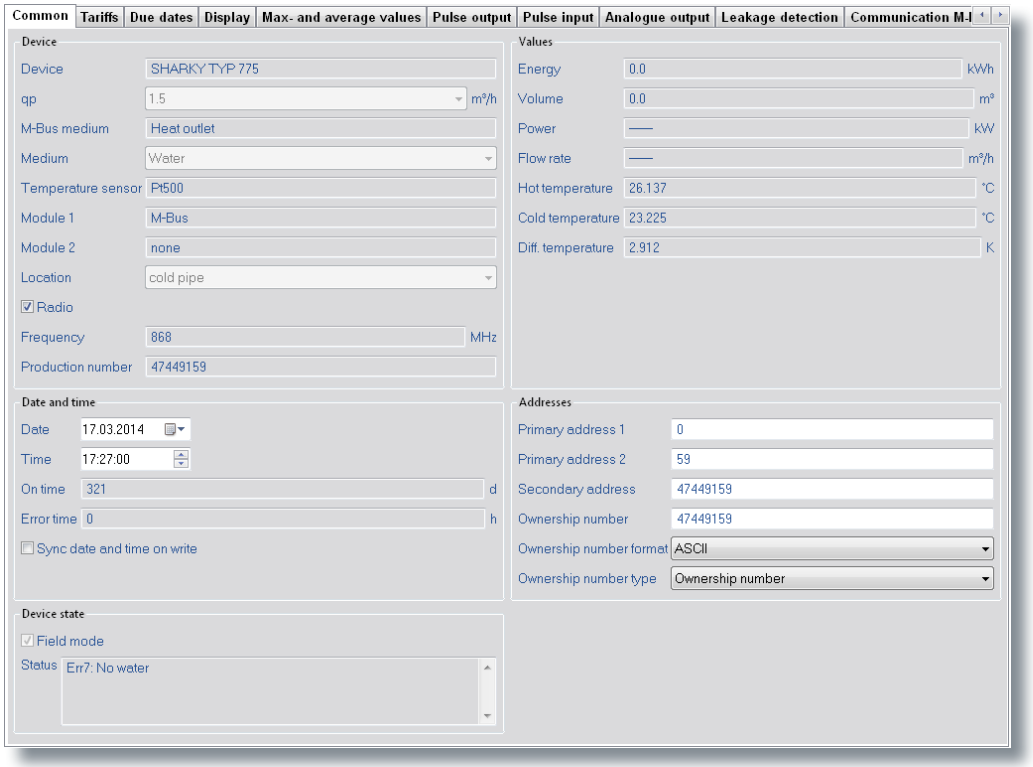


Fig. 21 : Tab "Common" [02.02]

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Date	Input of an optional date	🕮	☑	☑
Time	Input of an optional time			
Sync date on write	When saving, the date of the device is synchronized with the date of the PC.	☑		
Primary address 1	Primary communication address for M-Bus module 1			
Primary address 2	Primary communication address for M-Bus module 2			
Secondary address	Secondary communication address for M-Bus module 1			
Ownership-number [V 02.02]	The ownership number is determined by the supplier as internal identification number.	🕮		
Ownership-number type [V 02.02]	Selection of the ownership number type: ■ Meter point ID ■ Ownership number			

7.2.2 Tariffs

You can set four different and two time-controlled tariff counters via this tab.

Contents

- Tariff 1 to 4
- Tariff 1 and 3 time-controlled
- Tariff 2 and 4 time-controlled

The tariff registers only accumulate if the tariff condition is fulllfilled.

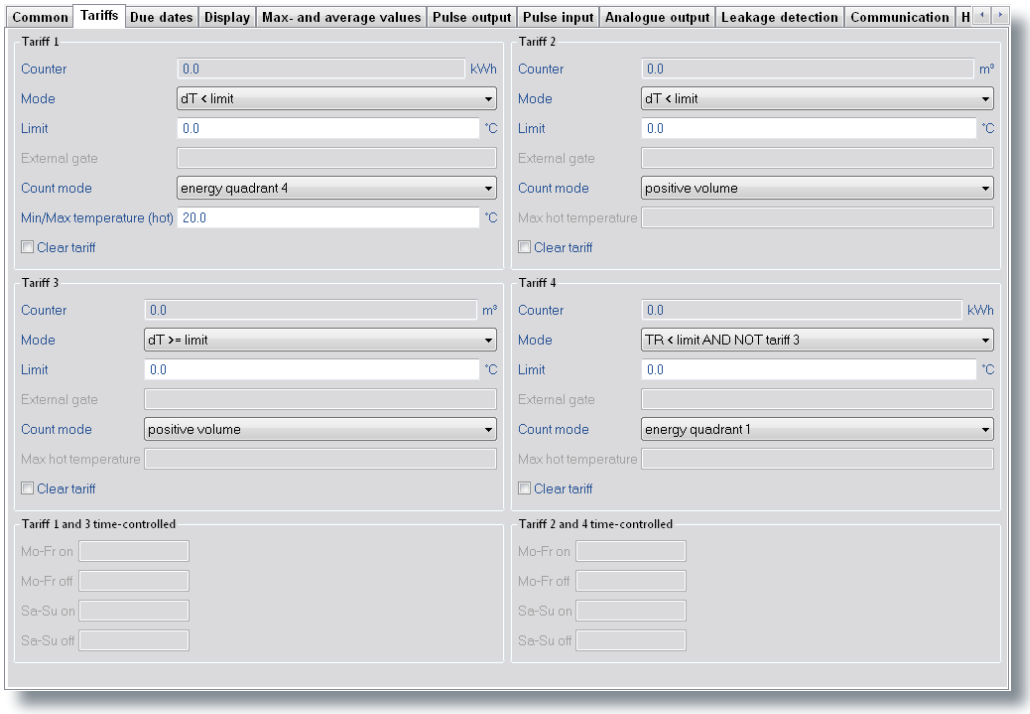


Fig. 22 : Tab "Tariffs" [01.01]

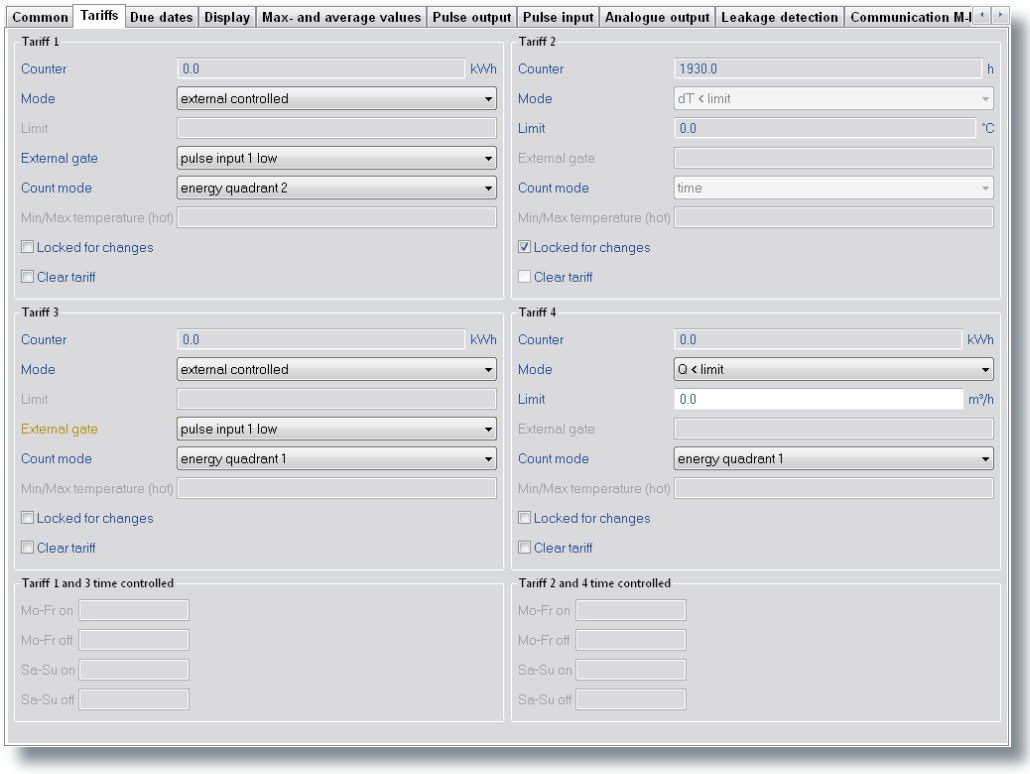


Fig. 23 : Tab "Tariffs" [02.02]

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Mode	Selection of the count tariff	Tariff 1 📖	☑	☑
Limit	Definition of the limit for the selected mode			
External gate	Controlled via pulse input 1			
Count mode	Selection of the data, which are supposed to be counted in the tab Tariff (depending on the mode).			
Max. temperature (hot)	Maximum forward flow temperature with cooling tariff	Tariff 2-4 ☑		
Locked for changes [02.02]	Selection for locking the modification of tariffs			
Clear tariff	Selected tariff is deleted.			
Time-controlled	Input of time frames where the time-controlled tariffs are "on" or "off"	📖		

Mode

Type	Limit	Definition Limit
dT	1 ... 255 °C	1 K
TR, TF	1 ... 255 °C	1 K
P	1 ... 255 kW	1 kW
Q	0.1 ... 25.5 m³/h	0.1 m³/h

time-controlled

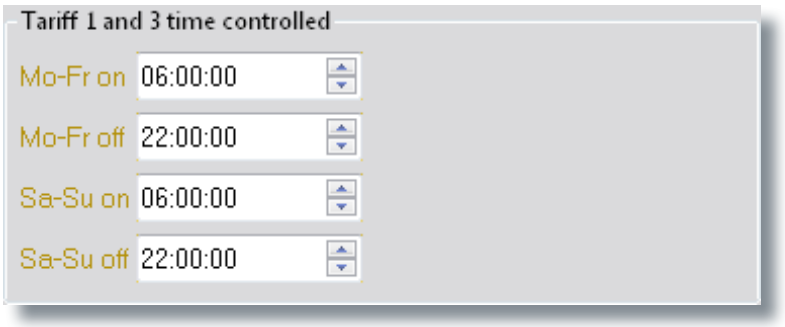


Fig. 24 : Configuration of the time-controlled tariff

- Here you can define on which days and in which period of time the dates should be accumulated.

externally controlled

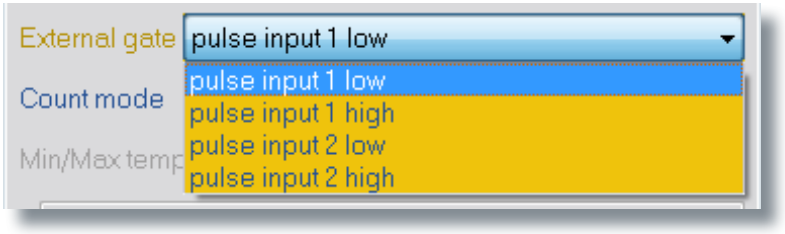


Fig. 25 : Selection menu of the pulse inputs

- Here, the pulse input for the external connection is selected.

Count mode

Type	Description
Energy quadrant 1 to 4	Select in which quadrant the energy should be accumulated. **Q1:** pos. flow and pos. temperature difference **Q2:** neg. flow and pos. temperature difference **Q3:** neg. flow and neg. temperature difference **Q4:** pos. flow and neg. temperature difference
Forward energy quadrant 1 and 4	Energy- counting of the tariff at pos. flow with flow sensor to zero in quadrant 1 and 4
Return energy quadrant 1 and 4	Energy- counting of the tariff at pos. flow with return sensor to zero in quadrant 1 and 4
Time	Time is accumulated instead of energy
Positive volume	With positive flow, the volume is accumulated
Negative volume	With negative flow, the volume is accumulated

7.2.3 Due dates

You can define two different due dates for the accumulation of the captured values with this tab.

As default the 1.6. and 31.12. are set as due dates.
The values of the due date refer to the beginning of the day, i.e. 0:00:00 h for the displayed day.

Contents

- Due date 1 / 2 settings
- Due date 1 / 2 current values
- Due date 1 / 2 last values

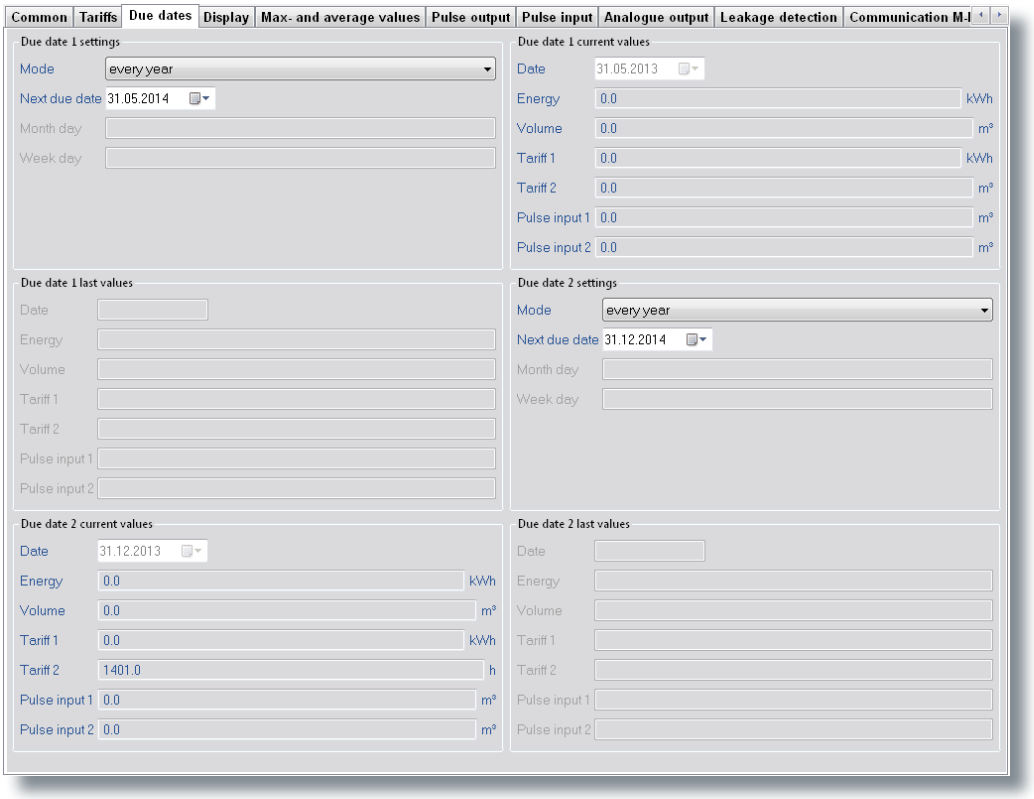


Fig. 26 : Tab "Due dates"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Due date settings	Definition of the period of time or the day when the values will be captured. The following can be selected: ■ every day ■ every week ■ twice a month ■ every month ■ every year	☑	☑	☑
Due date current values	Display of retrieved due date values	🕮	🕮	🕮
Due date last values	Display of the last due date values			

7.2.4 Display

Use this tab to define up to six loops (order of the menu), which can be retrieved via the device.

You can select them via the corresponding lists of the available device menus and sort them in display order.

Loop 1 and 3 can not be disabled.
The order of loop 6 (monthly log) can not be changed.

Contents

- Loop 1 to 6

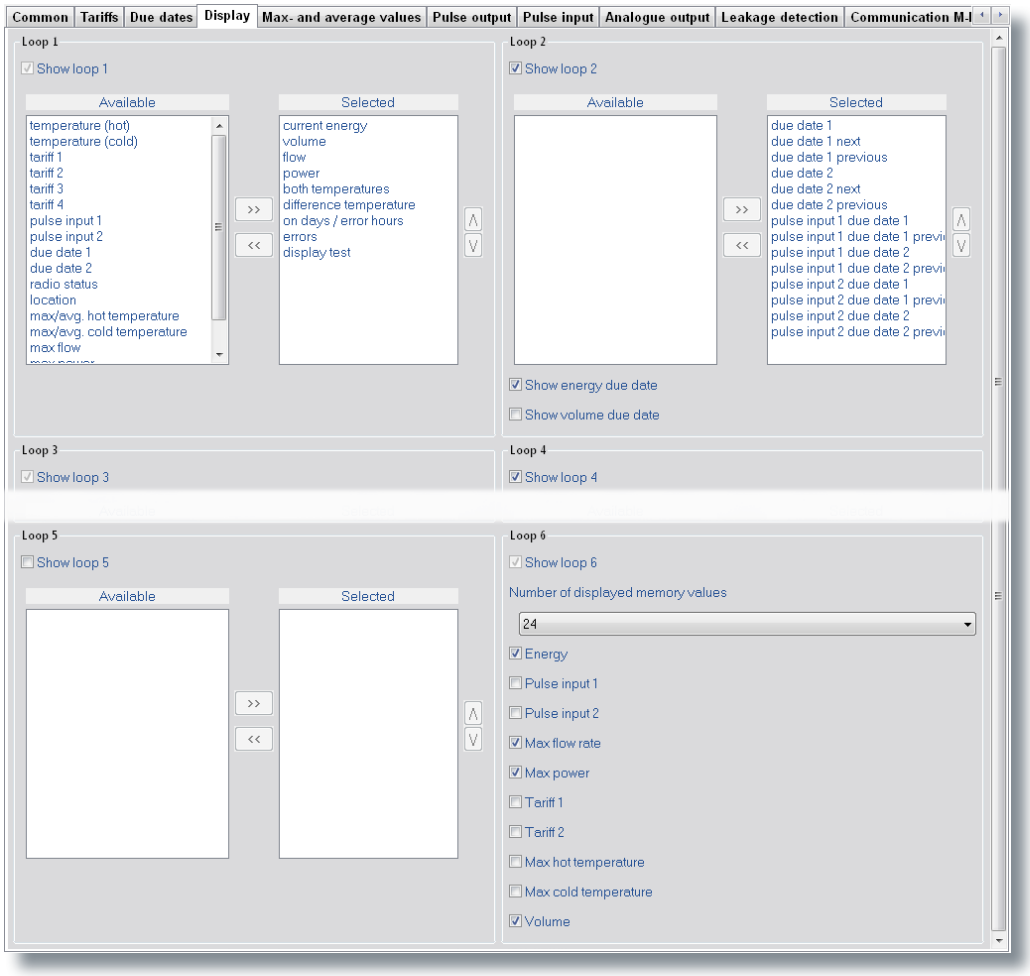


Fig. 27 : Tab "Display"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Loop 1 and 3	Freely configurable, but not deactivateable loops	📖	☑	☑
Loop 2, 4, 5	Freely configurable loops			
Loop 6	Monthly log			

The following fields must be defined in a desired loop of the display. These fields cannot be removed from a loop until they have been added to another loop.

- Installation position
- Error status
- Display test
- Software version

7.2.5 Maximum and average values

Use this tab to define at which intervals the individual data should be captured and stored in the periodical or history log.

The interval for maximum values must always be smaller than the mode of the periodic log.
For example, it is NOT possible to set both to daily!

Contents

- Settings
- Flow rate
- Power
- Temperature (hot)
- Temperature (cold)
- Temperature difference

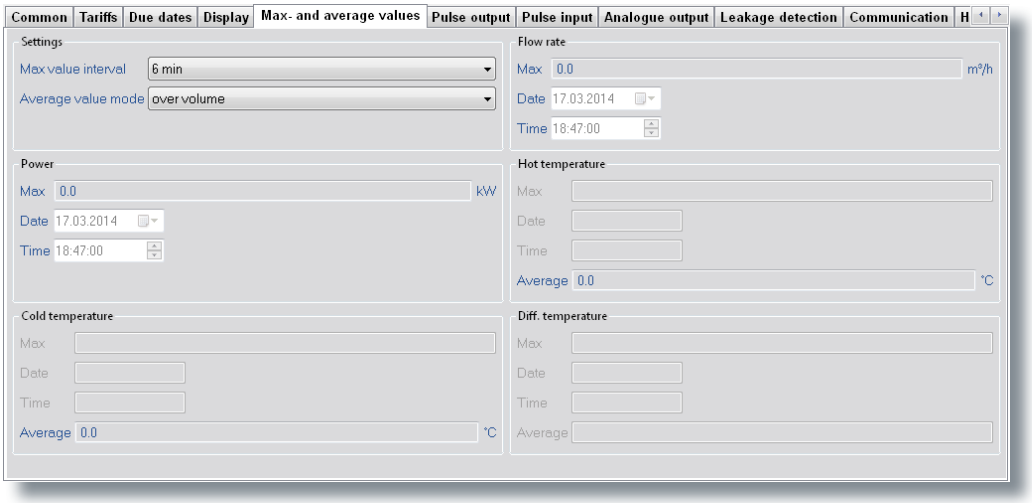


Fig. 28 : Tab "Max.- and average values" [01.01]

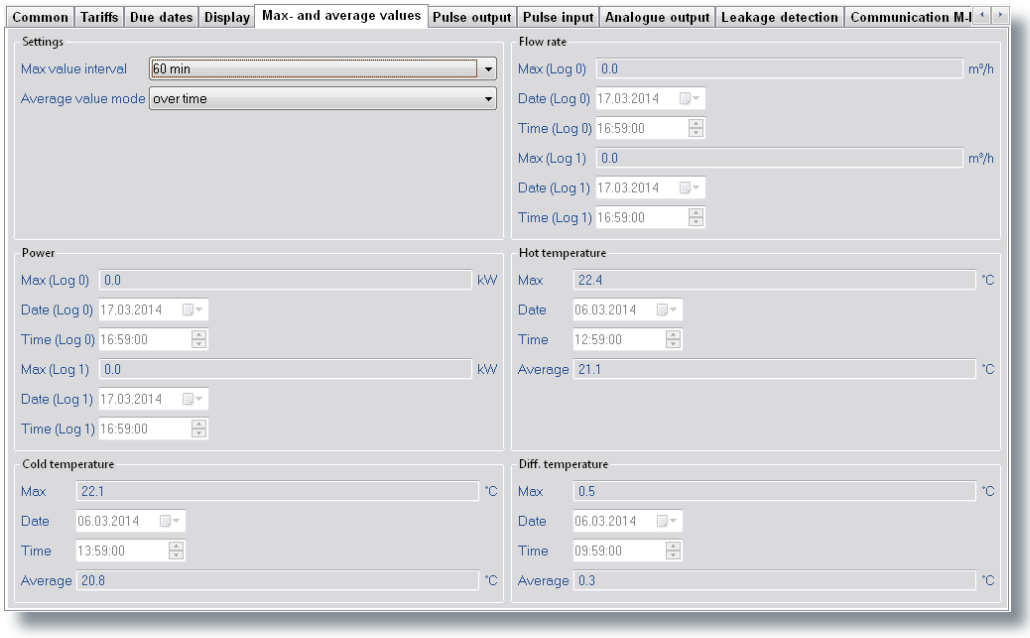


Fig. 29 : Tab "Max.- and average values" [02.02]

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Settings	Definition of the data collection interval and the data base	📖	📖	☑
Flow rate	Display of the maximum flow volume at the selected time.			📖
Power [01.01]	Display of the maximum power at the selected time.			
Power Log 1 [02.02]	Display ot the maximum power at the selected time 1			
Power Log 2 [02.02]	Display ot the maximum power at the selected time 2			
Temperature (hot)	Display of the maximum temperature (with time-stamp) and the average value at the last integration interval			
Temperature (cold)	Display of the lowest temperature (with time-stamp) and the average value at the last logging interval			
Temperature difference	Display of the maximum temperature difference (with time-stamp). Display of the average value at the last logging interval			

Interval of maximum values

To prevent short-term peaks being received as maximum values, the integration interval serves as a temporary mean value to dampen such short-term peak values. This means the highest mean values are stored in the maximum values.

You can define the following intervals:

- 6 minutes
- 15 minutes
- 30 minutes
- 60 minutes
- 24 hours

Formation of the mean values

The mean values can be calculated on the following basis:

- over time (the maximum values, their date and time of appearance for all tabs are shown here)
- over forward volume
- over return volume
- over volume

7.2.6 Pulse output

You can define two pulse outputs via this tab.

For detailed information on the configuration of the pulse outputs refers to the original operating instructions of the connected device.

Contents

- Pulse output 1 and 2

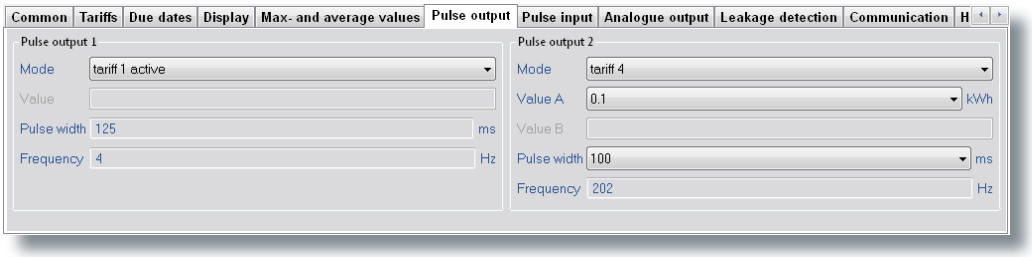


Fig. 30 : Tab "Pulse output" [01.01]

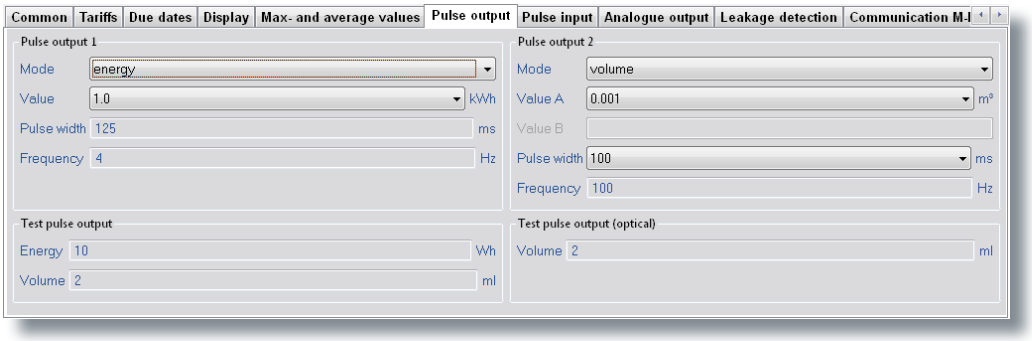


Fig. 31 : Tab "Pulse output" [02.02]

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Pulse output 1	Pulse output 1 has a fixed pulse width and frequency.	📖	☑	☑
Pulse output 2	The pulse width of pulse output 2 is configurable. This results in a maximum pulse frequency.	☑		
Test pulse output [02.02]	Pulse value when using the optional test cable	📖	📖	
Test pulse output (optical) [02.02]	Optical pulse value with meter in text mode (remote control or internally bridged)			

7.2.7 Pulse input

You can define two pulse inputs via this tab to connect further devices (e.g. water meter, gas- or energy meter).

For detailed information on the configuration of the pulse inputs refert to the original operating instructions of the connected device.

Contents

- Pulse input 1 and 2

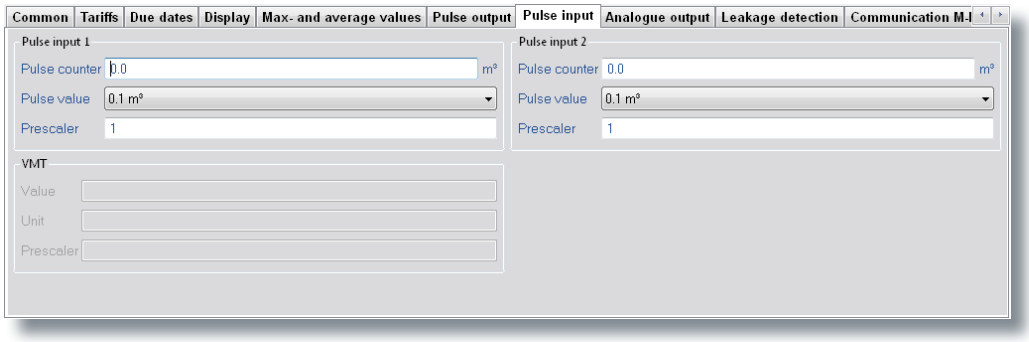


Fig. 32 : Tab "Pulse input"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Pulse input 1 and 2	Pulse input for capturing external data	📖	☑	☑
Flow sensor				

Prescaler

The prescaler acts as a "pre-counter". If this is set to 5, then the device counts every fifth pulse. This also makes it possible to set non-decadic units.

Example:

The volume meter has a pulse value of 2.5 litres/pulse

- Pulse value: Select the value 0.01 m³ in the pull down menu.
- Pulse meter: Enter the value 1.0 (m³)
- Prescaler: The value for the prescaler is calculated as follows:
  0.01 m³ = 10 litres;

$$\frac{10 \text{ litre}}{2.5 \text{ litre/pulse}} = 4 \text{ pulse}$$

- Prescaler: Enter the value 4

7.2.8 Analogue output

You can use this tab to allocate two analogue outputs with output signals.

Contents

- Analogue output 1 and 2

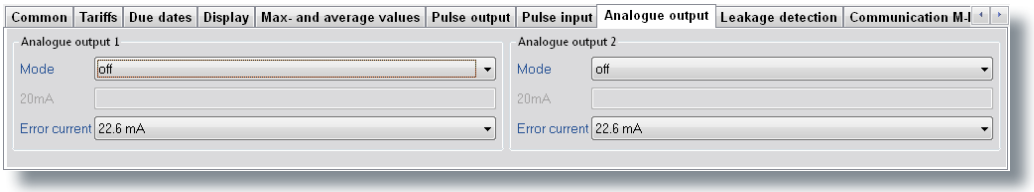


Fig. 33 : Tab "Analogue output"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Analogue output 1 and 2	Definition of error signals controlling external devices	☑	☑	☑

Mode

You can choose the following modes for error definition:

- Temperature difference 4 digits: up to 3 digits before and 1 digit after the decimal point
- Temperature (cold): up to 3 digits before the decimal point
- Temperature (hot): up to 3 digits before the decimal point
- Power: up to 8 digits before the decimal point
- Flow rate 6 digits: up to 6 digits before or 3 digits after the decimal point
- off

You have to define the limit value for triggering the analogue signal after defining the mode.

Starting values are limited to:
- Flow rate: max. flow rate (dependent on nominal size)
- Power: max. power (dependent on nominal size)
- Absolute temperature: 125 °C
- Temperature difference: 125 K

Error signal

You can allocate the signals with the following output currents:

- 3.5 mA
- 22.6 mA

7.2.9 Leakage detection

You can use this tab to define parameters for the automatic detection of leakages in the system and to send corresponding alarm messages.

This function distinguishes between detection of a "gradual" leak and a burst pipe.

Contents

- q_p
- Heat
- Water
- Alarm settings

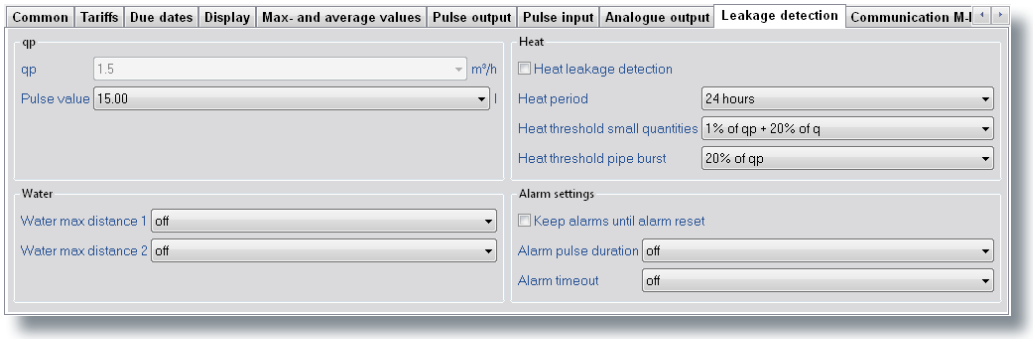


Fig. 34 : Tab "Leakage detection"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Heat	Activating the leakage detection in the heating circuit, definition of interval and identification value	📖	☑	☑
Water	Definition of maximum time between pulse input 1 and 2			
Alarm settings	Response in case of leakage alarm			

q_p Here you can see the actual flow rate on pulse input 2.

Heat For the gradual leakage detection an interval and the definition for the detection of the leak flow rate are necessary. The device will record a possible loss depending on the current flow rate and the nominal value during the interval.

The burst pipe detection is a reaction to large differences between the forward and return flow rate. This immediately generates an alarm.

Water You can use pulse inputs In1 und In2 for hot water and cold water consumption.

The maximum time is the time in which the device does not expect any consumption for example at night.

Alarm settings The alarm output is also retained when the leakage as such is no longer detected or detectable. The reaction to this situation can be configured.

The alarm output is provided by the pulse out module.
A suitable setting is necessary for the output.

7.2.10 Communication (only version 01.01)

Use this tab for the definition of two telegrams, which should be transferred.

The device supports two communication channels over the same or different interfaces. An additional communication module can be used in radio operation.

The protocols can be programmed separately for the two channels according to the requirements of the customer. Each channel has its own primary address. The device has a secondary address. The specific parameters for the device-internal radio are set as well as the protocols.

Contents

- Telegram lengths
- Internal radio communication
- Telegram 1 and 2 contents

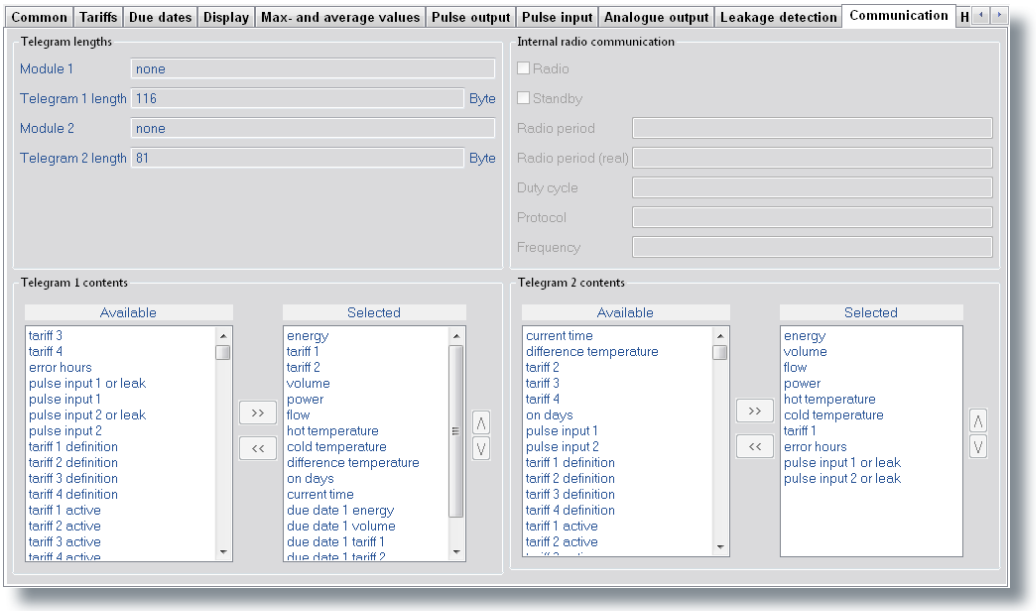


Fig. 35 : Tab "Communication" [01.01.]

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Telegram lengths	Display of the module and the set telegram length	📖	📖	📖
Internal radio communication	Configuration data of the internal radio		☑	☑
Telegram 1 and 2 contents	Definition of telegram content and order			

Telegram lengths

The length of the telegrams is calculated and shown. For the use as radio telegram, a maximal length of 150 bytes is possible. The communication with M-Bus allows a telegram length of up to 250 bytes.

The length of the radio telegram also affects the transmit interval. A duty cycle of 0.1 % is specified for this by legislation. The transmit interval can be intentionally increased, however, in order to avoid collision in radio traffic. A range between 8 s and 254 s is possible.

Internal radio Here you can activate the radio communication for internal radio.

The Standby parameter indicates that the device is in the factory setting. If the meter is then filled with water for 2 minutes, the meter activates radio automatically. The radio will be activated permanently, if the SHARKY 775 detects water for 3 hours without interruption. If the water is interrupted within 3 hours, the meter returns to Standby. If 10 volume pulses are detected with the SCYLAR INT 8 for the first time, the radio stays activated.

The radio protocol corresponds to the Hydrometer standard or the Open Metering standard and is encrypted. A transmission frequency of 868 MHz or 434 MHz is shown.

In Test Lab mode, test centres can choose between Real Data and Open Metering as radio protocol.

The radio protocol can only be changed to Open Metering if the factory setting function in the User Preferences - Security menu is NOT selected, so that the correct extension can be written for the radio key.

Content telegram 1 and 2 You can configure both telegrams and sort the order of the content according to the available contents of both telegrams.

As soon as the maximum allowed length of a telegram is reached, a further adding of contents is not longer possible.

7.2.11 Communication M-Bus (only version 02.02)

Use this tab for the definition of two telegrams, which should be transferred.

The device supports two communication channels over the same or different interfaces. An additional communication module for the selection via an own tab can be used in radio operation.

The protocol may be different for the two channels and can be programmed according to the requirements of the customer. Each channel has its own primary address. Each device has a secondary address.

Contents

- Content telegram 1 and 2

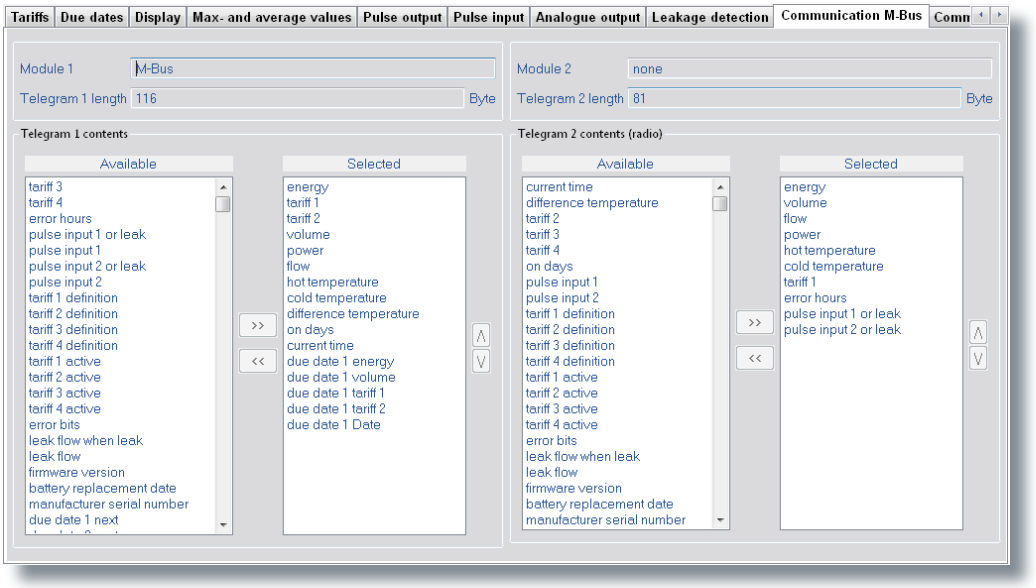


Fig. 36 : Tab "Communication M-Bus" [02.02]

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Telegram 1 and 2 contents	Definition of telegram content and order	🕮	🕮	☑

7.2.12 Communication radio (only version 02.02)

Use this tab for the definition of the telegram, which will be transferred.

The specific parameters for the device-internal radio are set as well as the protocols.

Contents

- Internal radio communication
- Telegram contents

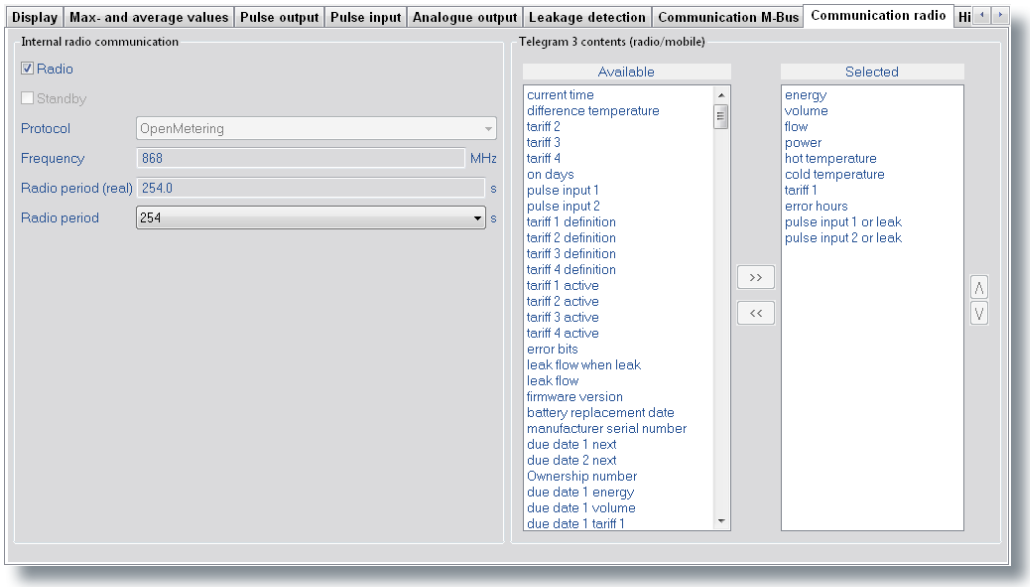


Fig. 37 : Tab "Communication radio" [02.02]

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Radio	Activating of communication by radio		☑	
Standby	The device is now ready for delivery (see also "Internal radio" on page 41)			
Protocol	Display of the used radio protocol	📖	📖	📖
Radio period	Selection of the desired radio period (8, 12, 16, 32, 64, 128 or 256 seconds)			
Telegram 1 and 2 contents	Definition of telegram content and order		☑	

7.2.13 Log configuration / History log configuration

Use this tab to define content and storage interval of the individual log.

If you change the settings for the history log and write these changes to the device, the current log will be cleared and the data previously collected lost.
First read out and export the data using the command "Export History Log 1" or "Export History Log 2", to save the data.

Contents

- Periodical log
- History log 1 and 2
- Ressource assignment (history log 1 and 2)

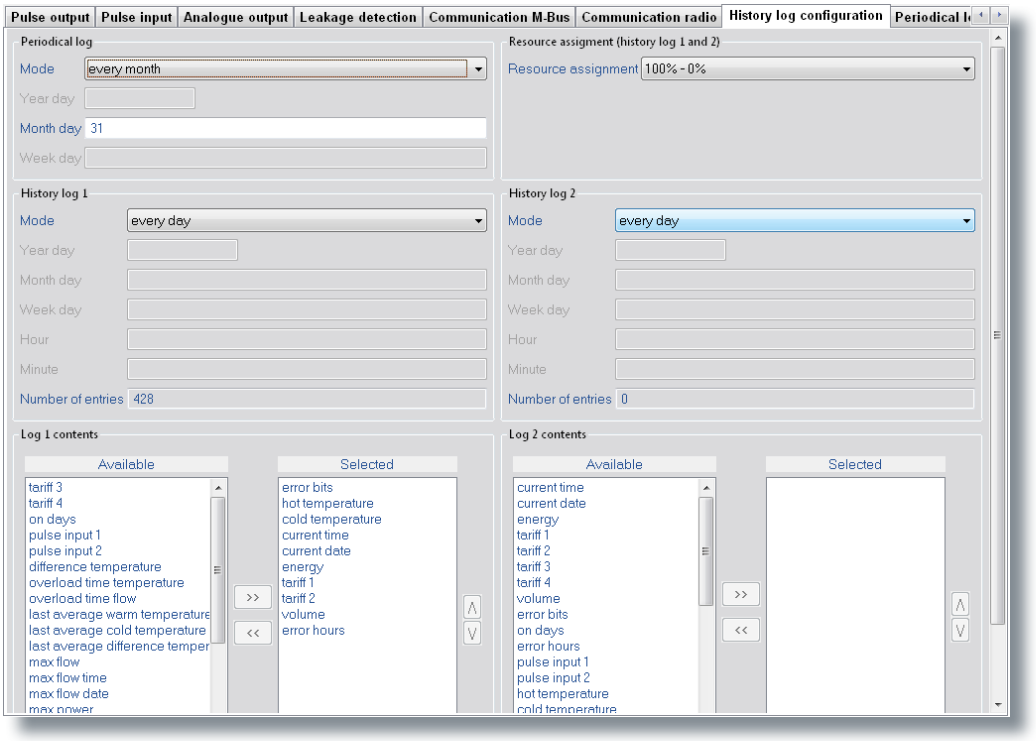


Fig. 38 : Tab "History log configuration"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Periodical log	Selection of the values for the periodical log	🕮	☑	☑
History log 1 and 2	Selection of the values for the history log	☑		

Periodical log

You can select the following memory modes:

- every day
- every week
- twice a month
- every month
- every year at due date 1
- every year at due date 2

Please keep in mind, the shorter the storage mode, the more data are present. Therefore more storage capacity is required.

The memories have limited space. If this space is full, the oldest entry is overwritten by the newest entry (FiFo).

The following contents are written in the periodical log:

- date / time
- energy
- tariff energy 1
- tariff energy 2
- volume
- pulse input meter 1
- pulse input meter 2
- tariff definition 1
- tariff definition 2
- pulse input definition 1
- pulse input definition 2
- error hours counter
- max. flow rate
- max. flow rate time
- max. flow rate date
- max. power
- max. power time
- max. power date
- operating days
- max. forward temperature
- max. forward temperature time
- max. forward temperature date
- max. return temperature
- max. return temperature time
- max. return temperature date

History log 1 and 2

You can select the following memory modes:

- every x minute
- every x hour
- every day
- every week
- twice a month
- every month
- every year at due date 1
- every year at due date 2

Please keep in mind, the shorter the storage mode, the more data are present. Therefore more storage capacity is required.

The memories have limited space. If this space is full, the oldest entry is overwritten by the newest entry (FiFo).

You can combine and sort the contents of the history log according to the available contents.

Ressource assignment (history log 1 and 2)

To obtain useful data in a short period of time, for example for checking the meter settings, use history log 1. To observe long-term consumption parallel to this, use history log 2.

First divide the log memory ressources. Select the ratio for dividing the memory space (ratio memory 1 corresponding to memory 2).

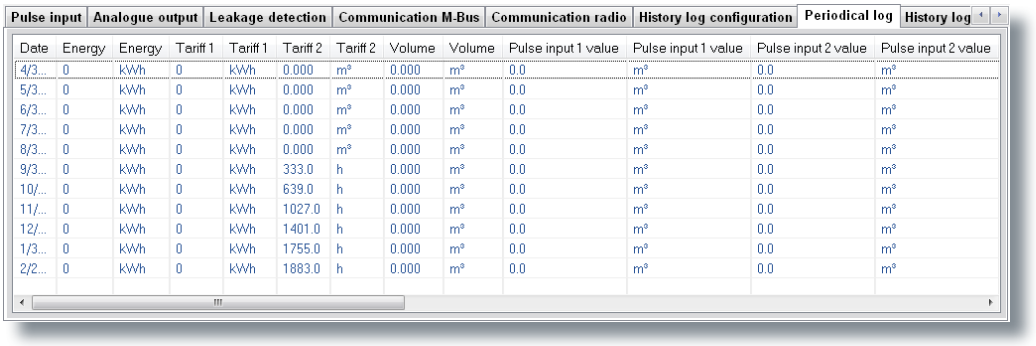
- 100 % - 0 %
- 90 % - 10 %
- 75 % - 25 %
- 50 % - 50 %
- 25 % - 75 %
- 10 % - 90 %
- 0 % - 100 %

7.2.14 Periodical log

You can use this tab to access all set contents in tab "History log configuration".

To display the content you have to read the periodical log (perform command "Read periodical log")

The log memories have only a limited space available. If this space is full, the oldest entry is overwritten by the newest entry (FiFo).



Date	Energy	Energy	Tariff 1	Tariff 1	Tariff 2	Tariff 2	Volume	Volume	Pulse input 1 value	Pulse input 1 value	Pulse input 2 value	Pulse input 2 value
4/3...	0	kWh	0	kWh	0.000	m³	0.000	m³	0.0	m³	0.0	m³
5/3...	0	kWh	0	kWh	0.000	m³	0.000	m³	0.0	m³	0.0	m³
6/3...	0	kWh	0	kWh	0.000	m³	0.000	m³	0.0	m³	0.0	m³
7/3...	0	kWh	0	kWh	0.000	m³	0.000	m³	0.0	m³	0.0	m³
8/3...	0	kWh	0	kWh	0.000	m³	0.000	m³	0.0	m³	0.0	m³
9/3...	0	kWh	0	kWh	333.0	h	0.000	m³	0.0	m³	0.0	m³
10/...	0	kWh	0	kWh	639.0	h	0.000	m³	0.0	m³	0.0	m³
11/...	0	kWh	0	kWh	1027.0	h	0.000	m³	0.0	m³	0.0	m³
12/...	0	kWh	0	kWh	1401.0	h	0.000	m³	0.0	m³	0.0	m³
1/3...	0	kWh	0	kWh	1755.0	h	0.000	m³	0.0	m³	0.0	m³
2/2...	0	kWh	0	kWh	1883.0	h	0.000	m³	0.0	m³	0.0	m³

Fig. 39 : Tab "Periodical log"

You can export the content of the periodical log as CSV file (perform command "Export periodical log"). The CSV-file is stored in the folder "Data" of the program directory IZAR_SET/IZAR.

7.2.15 History log 1 and 2

You can use this tab to access all set contents in tab "History log configuration".

To display the content you have to read the desired history log (perform command "Read History Log 1" or "Read History Log 2").

The log memories have only a limited space available. If this space is full, the oldest entry is overwritten by the newest entry (FiFo).

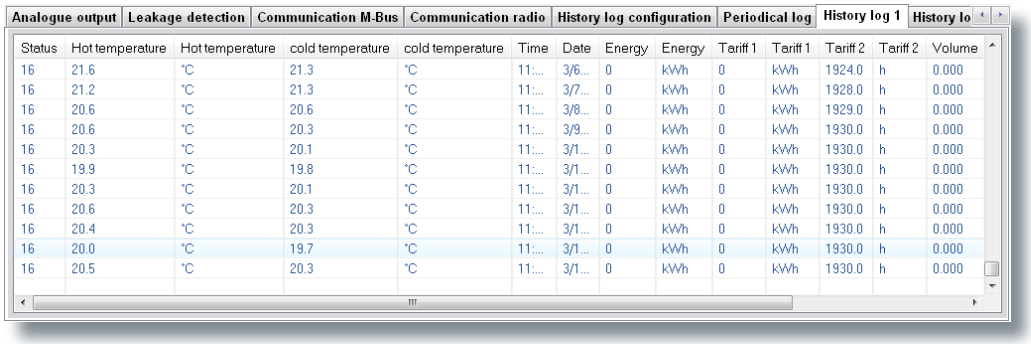

Analogue output
Leakage detection
Communication M-Bus
Communication radio
History log configuration
Periodical log
History log 1
History lo
Status Hot temperature Hot temperature cold temperature cold temperature Time Date Energy Energy Tariff 1 Tariff 1 Tariff 2 Tariff 2 Volume
16 21.6 °C 21.3 °C 11:... 3/6... 0 kWh 0 kWh 1924.0 h 0.000
16 21.2 °C 21.3 °C 11:... 3/7... 0 kWh 0 kWh 1928.0 h 0.000
16 20.6 °C 20.6 °C 11:... 3/8... 0 kWh 0 kWh 1929.0 h 0.000
16 20.6 °C 20.3 °C 11:... 3/9... 0 kWh 0 kWh 1930.0 h 0.000
16 20.3 °C 20.1 °C 11:... 3/1... 0 kWh 0 kWh 1930.0 h 0.000
16 19.9 °C 19.8 °C 11:... 3/1... 0 kWh 0 kWh 1930.0 h 0.000
16 20.3 °C 20.1 °C 11:... 3/1... 0 kWh 0 kWh 1930.0 h 0.000
16 20.6 °C 20.3 °C 11:... 3/1... 0 kWh 0 kWh 1930.0 h 0.000
16 20.4 °C 20.3 °C 11:... 3/1... 0 kWh 0 kWh 1930.0 h 0.000
16 20.0 °C 19.7 °C 11:... 3/1... 0 kWh 0 kWh 1930.0 h 0.000
16 20.5 °C 20.3 °C 11:... 3/1... 0 kWh 0 kWh 1930.0 h 0.000

Fig. 40 : Tab "History Log 1 / 2"

You can export the contents of history log 1 or 2 as CSV file (perform command "Export History Log 1" or "Export History Log 2". The CSV-file is stored in the folder "Data" of the program directory IZAR_SET/IZAR.

7.2.16 Error log

To display the content you have to read the error log (perform command "Read Error Log").

An error is eventually stored and displayed when the error is displayed longer than 6 minutes without interruption.

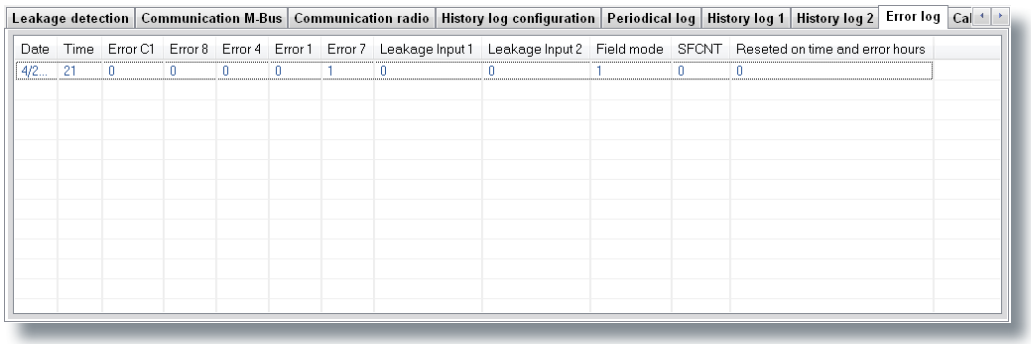

Leakage detection
Communication M-Bus
Communication radio
History log configuration
Periodical log
History log 1
History log 2
Error log
Cal
Date Time Error C1 Error 8 Error 4 Error 1 Error 7 Leakage Input 1 Leakage Input 2 Field mode SFCNT Reseted on time and error hours
4/2... 21 0 0 0 0 1 0 0 1 0 0

Fig. 41 : Tab "Error log"

This overview shows all occurred errors. Date and time are also shown.

Which error has occurred, is indicated by 0 or 1.

Explanations:

0 = Error not occurred

1 = Error occurred

All errors are stored, even if several errors occur simultaneously.

You can export the contents of the error log as CSV file (perform command "Export error Log"). The CSV-file is stored in the folder "Data" of the program directory IZAR_SET/IZAR.

Error table SHARKY 775

Error	Error description	Cause, Remedy
C - 1	Basic parameters saved in flash or RAM have been lost	Replace meter
E 1	Temperature range exceeds (-9.9 °C ... 190 °C)	Sensor short-circuit, sensor break Replace sensor
E 3	Forward and return sensor reversed	Interchange forward and return sensor
E 4	Hardware error	Transducer defective or short-circuit
E 5	Communication not possible	Too frequent reading Increase interval for maximum values (see "Interval of maximum values" on page 35)
E 6	Flow direction of flow meter incorrect	Flow rate = 0 Check installation position and ensure correct installation
E 7	No meaningful ultrasonic receive signal	Air in the measuring path
E 8	Defective primary voltage (only if mains unit used) Supply from backup battery	Check primary voltage and ensure supply
E 9	Battery nearly discharged	Replace meter
E A	Leakage: Burst pipe detected	Check pipes and connections, repair if necessary
E b	Leakage: Heat meter leak detected	Check meter, replace if necessary
E C	Leakage: Leakage pulse input 1	Check pulse input 1 and repair leakage if necessary
E d	Leakage: Leakage pulse input 2	Check pulse input 2 and repair leakage if necessary

Error table SCYLAR INT 8

Error	Error description	Cause, Remedy
C - 1	Basic parameters saved in flash or RAM have been lost	Replace meter
E 1	Temperature range exceeds (-9.9 °C ... 190 °C)	Sensor short-circuit, sensor break Replace sensor
E 3	Forward and return sensor reversed	Interchange forward and return sensor
E 5	Communication not possible	Too frequent reading Increase interval for maximum values (see "Interval of maximum values" on page 35)
E 8	Defective primary voltage (only if mains unit used) Supply from backup battery	Check primary voltage and ensure supply
E 9	Battery nearly discharged	Replace meter
E A	Leakage: Burst pipe detected	Check pipes and connections, repair if necessary
E b	Leakage: Heat meter leak detected	Check meter, replace if necessary
E C	Leakage: Leakage pulse input 1	Check pulse input 1 and repair leakage if necessary
E d	Leakage: Leakage pulse input 2	Check pulse input 2 and repair leakage if necessary

7.2.17 Calibration

This tab displays data which are important for testing laboratories.

A modification of these values is only possible by testing laboratories

Contents

- Values (high resolution)
- Units
- Adjustment
- Test pulse output
- Test pulse output (optical)
- Device interna
- Battery replacement

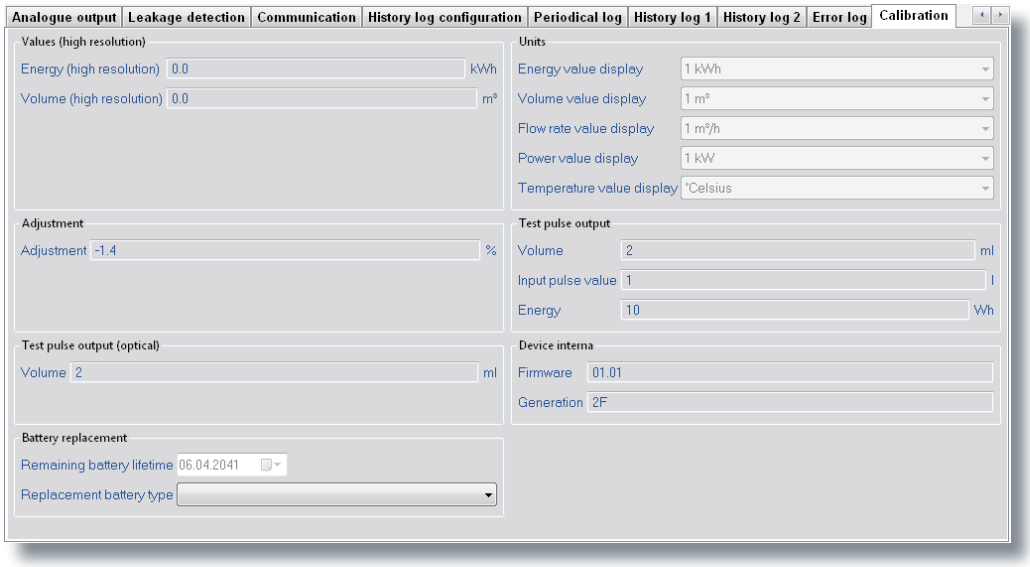


Fig. 42 : Tab "Calibration" [01.01]

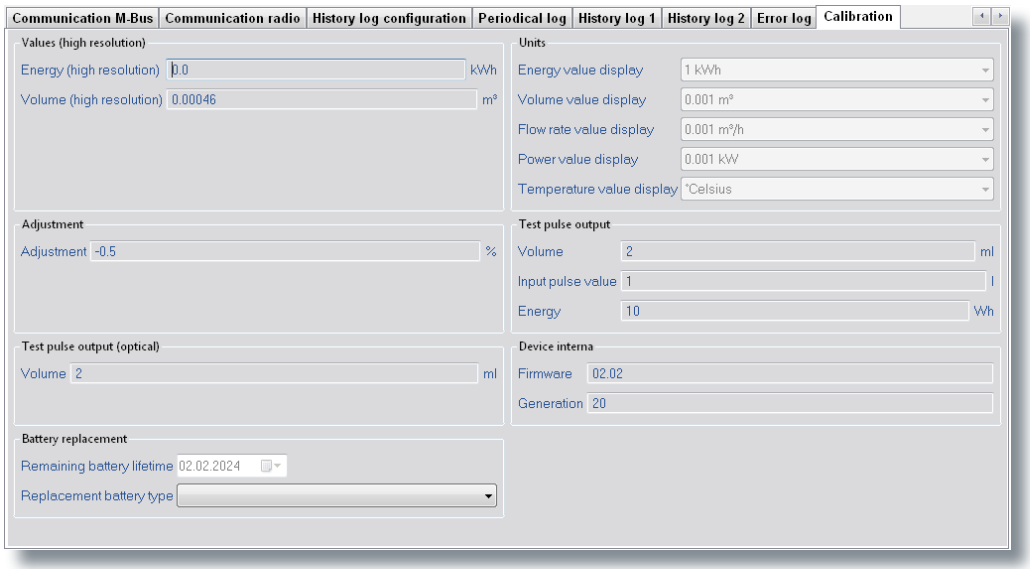


Fig. 43 : Tab "Calibration" [02.02]

Choose the battery in the pull down menu which you want to supply voltage to the device. The replacement date is calculated automatically and displayed.

You can choose between:

- A-cell (3.6 VDC, 11 years lifetime, incl. radio at reading rate of 180 s)
- D-cell (3.6 VDC, 16 years lifetime, incl. radio at reading rate of 12 s)

7.3 Menu bar "Command"

When performing the menu "Command" via the menu bar, several device-specific functions (depending on access level) are available.

Command	Description
Read error log	The log of the device is read.
Read periodical log	
Read History log 1	
Read History log 2	
Export error log	The corresponding log is saved as csv-file in the folder "Data" in the installation directory of IZAR@SET. The file name consists of the production number (secondary address) of the device, the name of the log memory and a 13-digit code.
Export periodical log	
Export History log 1	
Export History log 2	
Clear on time	Counts are cleared
Clear time error	
Clear leakage alarms	Leakage alarms are cleared.
Clear error log	Error log is cleared.
Reset counters and logs	All counts and all logs are cleared.
Export debug log (in case of error)	This command generates an encrypted diagnostic file which the customer support of Hydrometer can evaluate, if an error occurs. As many data as possible are read by the meter. This is the reason why this operation can last a very long time. Use this command only if an error occurs.
Export configurations	All device settings are saved as csv-file in the folder "Data" in the installation directory of IZAR@SET.

8 RAY Radio

8.1 General

All the configurations you can execute with IZAR@SET in connection with the energy meter RAY Radio and the opto head are described in this chapter.

You will find additional information for the device or the opto head in the separate instruction manuals. If these are not available, you can download them from the Diehl Metering Homepage.

Please enter the following address in your browser:

http://www.diehl.com/en/diehl-metering.html

Under the heading "Products & Solutions" \ "Product-Download" an overview opens, where you can find all available documents for downloading.

The following requirements must be met:

- Your device is connected to IZAR@SET (for more information refer to "3.4 Connecting devices to IZAR@SET" on page 18.)

8.2 Tabs

This chapter describes which configurations you can execute on which authorization level.

Depending on the access rights you have:

- read-only access rights 🕮
- writing access ☑

As soon as your device is connected to IZAR@SET, the device-specific tabs are shown.

Depending on individual configurations further definition options are enabled.

If different settings are available, it is also necessary to enter values. In this case, the input fields are marked in YELLOW.

8.2.1 Common

The tab "Common" shows all the info regarding the connected device.

Contents

- Device
- Radio
- Date and time
- Meter
- Due date

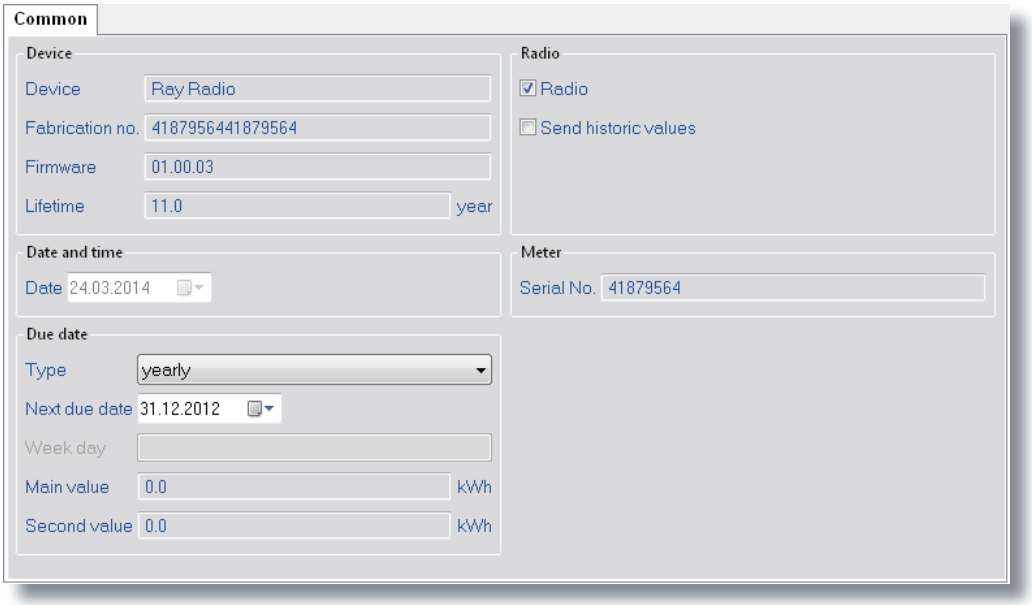


Fig. 44 : Tab "Common"

8.2.2 Device

Fig. 45 : Section "Device"

Here you receive general information about the connected device (type of device, fabrication number, firmware, lifetime).

8.2.3 Radio

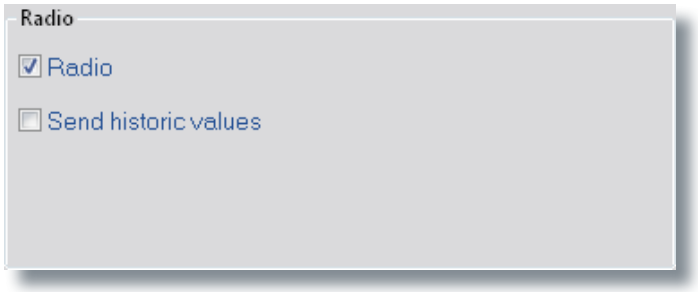


Fig. 46 : Section "Radio"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Radio	Activating and deactivating of the radio. If the radio is deactivated, the device stays operational.	🕮	☑	☑
Send historic values	For the activation of the radio telegram with 3 due date values (otherwise only one due date will be sent)			

If the radio is deactivated, the meter is fully operational, but no data will be transmitted by radio.

8.2.4 Date and time

Fig. 47 : Section "Date and time"

Here the current date is shown.

8.2.5 Meter

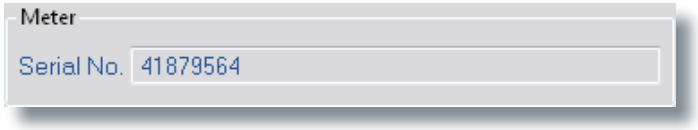


Fig. 48 : Section "Meter"

Here is the serial number of the meter shown.

8.2.6 Due date

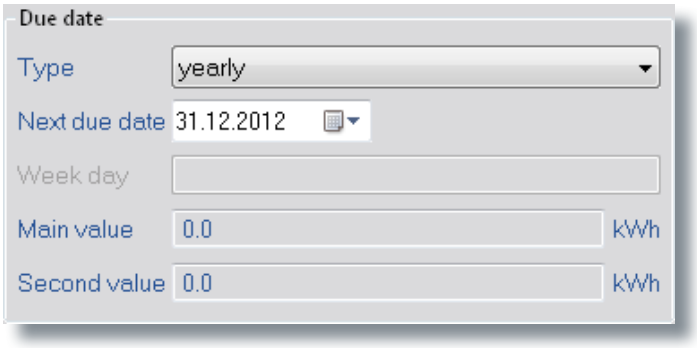


Fig. 49 : Section "Due date"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Due date	Definition of the period of time or the day when the values will be captured. The following can be selected: ■ Yearly ■ Monthly ■ Weekly	🕮	☑	☑

8.3 Reading meter readings

The meter sends automatically every 64 seconds the number of the meter, the meter reading as well as other operation information.

The capturing of the data can be done by a mobile or stationary receiver.

The data can also be read on the display.

9 HYDRUS

9.1 General

All the configurations you can execute with IZAR@SET in connection with the ultrasonic water meter HYDRUS (Firmware-Version 03-003- / 04-005) and the opto head are described in this chapter.

All different content between Firmware Version [03-003] and [04-005] are marked accordingly.

The device is available in four different versions:

- Radio
- M-Bus
- L-Bus
- Pulse

Depending on the version the images in IZAR@SET may vary.

You will find additional information for the device or the opto head in the separate instruction manuals. If these are not available, you can download them from the Diehl Metering Homepage.

Please enter the following address in your browser:

http://www.diehl.com/en/diehl-metering.html

Under the heading "Products & Solutions" \ "Product-Download" an overview opens, where you can find all available documents for downloading.

The following requirements must be met:

- Your device is connected to IZAR@SET (for more information refer to "3.4 Connecting devices to IZAR@SET" on page 18.)

9.2 Tabs

This chapter describes which configurations you can execute on which authorization level.

Depending on the access level you have:

- read-only access rights 🕮
- writing access ☑

As soon as your device is connected to IZAR@SET, the device-specific tabs are shown.

Depending on individual configurations further definition options are enabled.

If different settings are available, it is also necessary to enter values. In this case, the input fields are marked in YELLOW.

9.2.1 Common

This tab shows general data for the connected device.

Contents

- Device
- Values (at 03-003) ; units (at 04-005)
- Date and time
- Addresses
- Device state

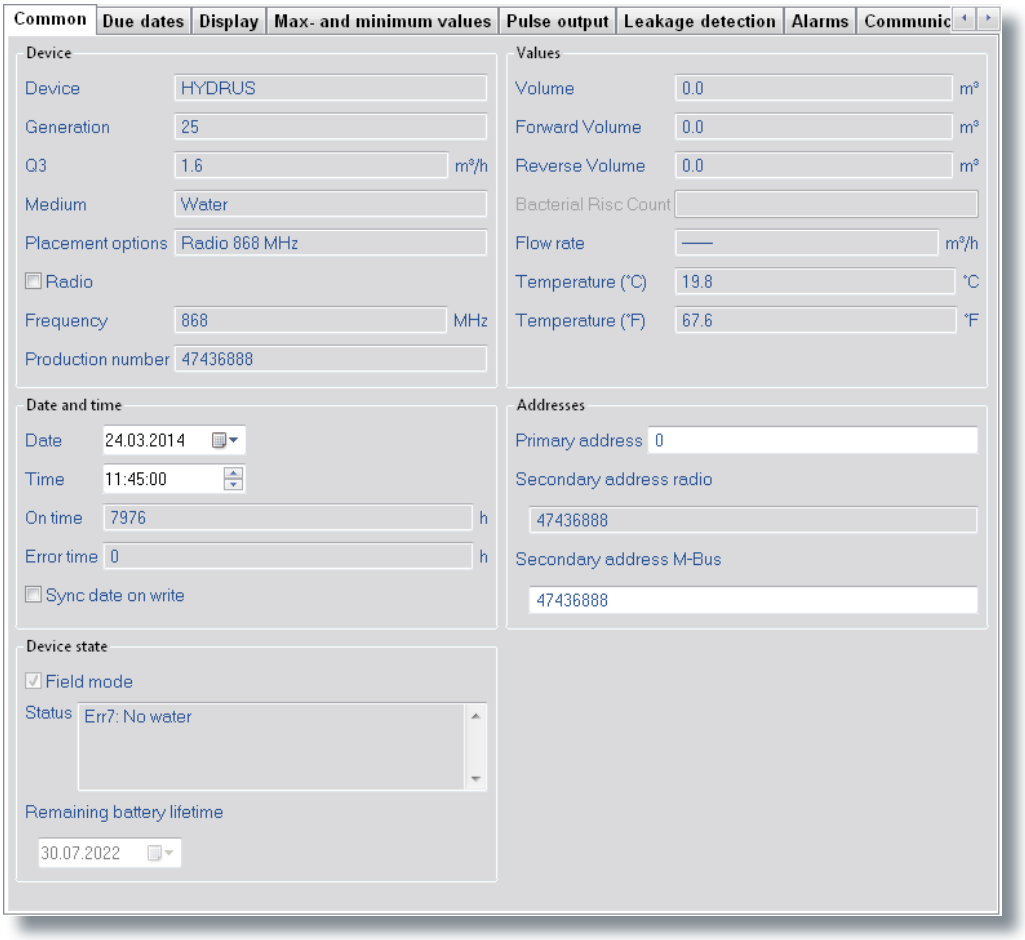


Fig. 50 : Tab "Common" [03-003]

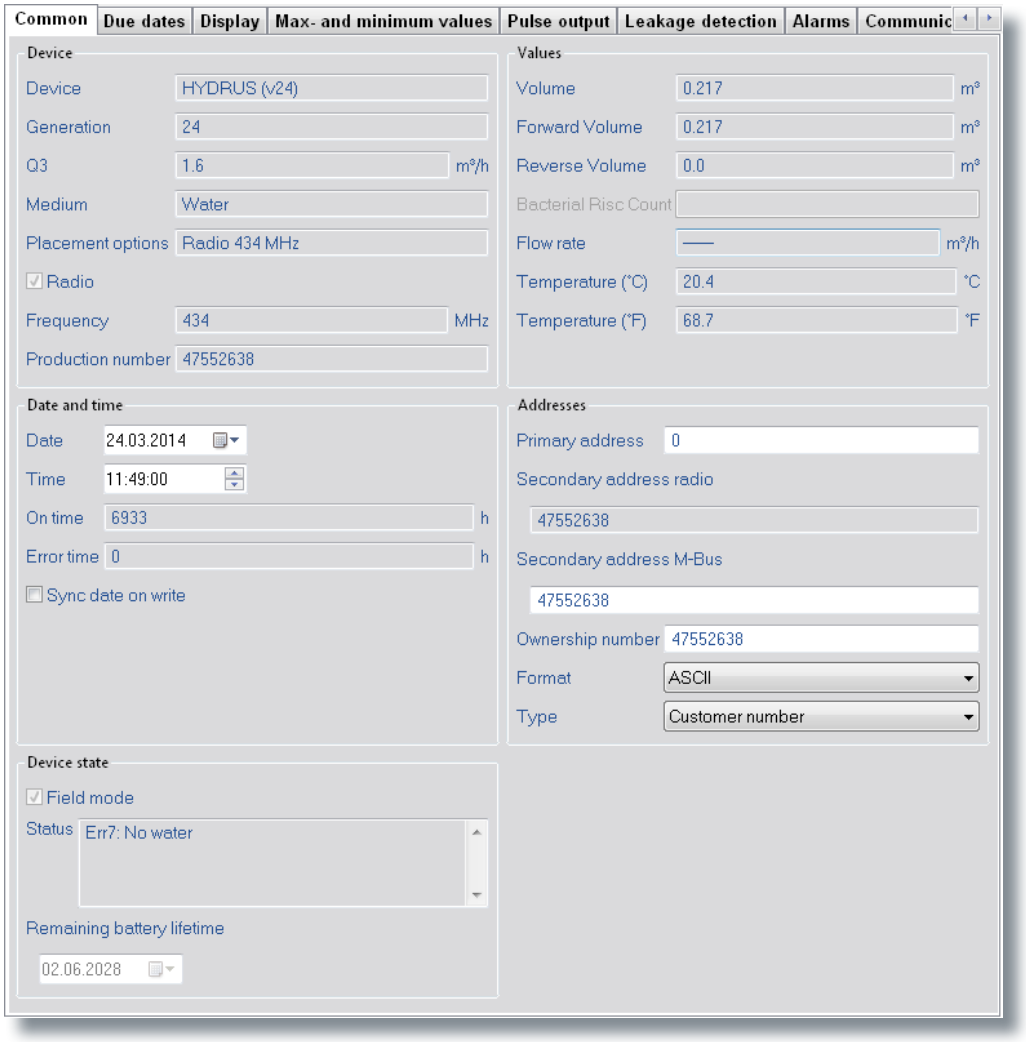


Fig. 51 : Tab "Common" [04-005]

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Date	Input of an optional date	🕮	☑	☑
Time	Input of an optional time			
Sync date on write	When saving, the date of the device is synchronized with the date of the PC.	☑	☑	☑
Primary address	Primary communication address for M-Bus module			
Secondary address M-Bus	Secondary communication address for M-Bus module	🕮	☑	☑
Ownership number (only 04-005)	The ownership number is determined by the supplier as internal identification number.			
Format (only 04-005)	Selection of the numerical code for the saving of the data: ■ ASCII ■ BCD number			
Type (only 04-005)	Classification of the type: ■ Customer number ■ Installation location			

9.2.2 Due dates

On this tab you can define due dates for the accumulation of the captured values.

As default the 31.12 is set as due date.
The values of the due date refer to the end of the day, i.e. at 23:59:59 h for the indicated day.

Contents

- Due date 1 settings
- Due date 1 current values
- Due date 1 last values

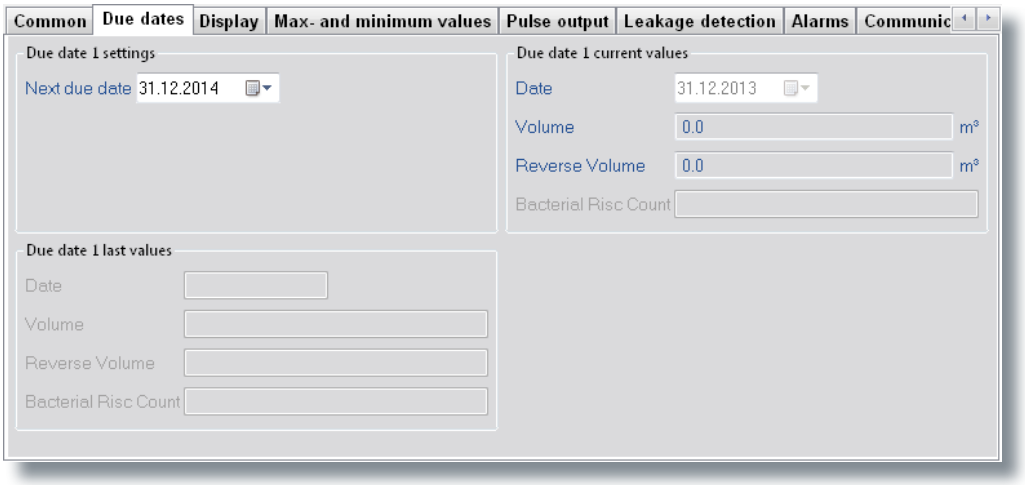


Fig. 52 : Tab "Due dates"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Due date settings	Definition of the day when the values are supposed to be captured.	☑	☑	☑
Due date current values	Display of retrieved due date values	🕮	🕮	🕮
Due date last values	Display of the last due date values			

9.2.3 Display

Use this tab to define a loop (order of the menu), which can be retrieved via the device.

You can select them via the corresponding lists of the available device menus and sort them in display order.

Contents

- Loop

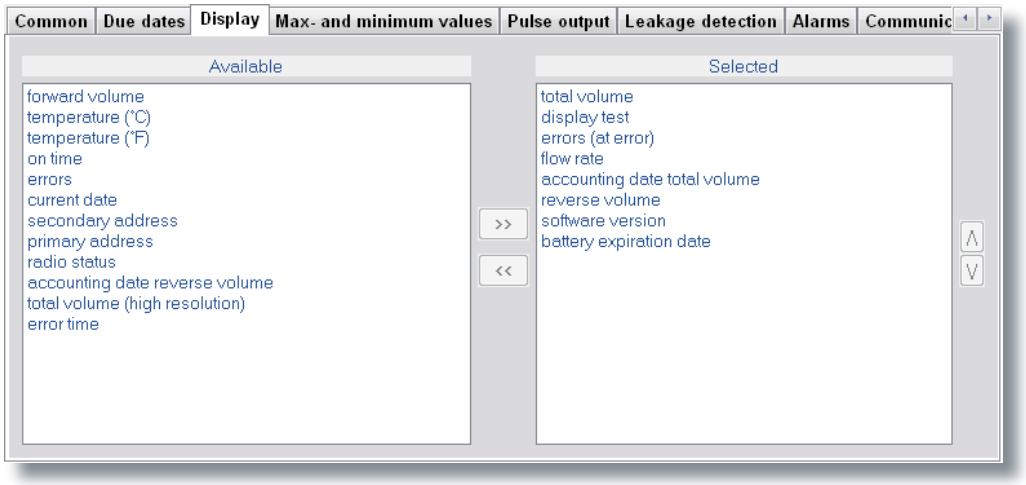


Fig. 53 : Tab "Display"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Loop	Free configurable loop	📖	☑	☑

The following fields can't be removed from the loop:
- Display test
- Error (an error exists)
- Software version
- Remaining battery lifetime
- Volume

9.2.4 Maximum- and minimum values

Use this tab to define at which intervals the individual data should be captured and stored in the periodical log.

Contents

- Settings
- Measured values

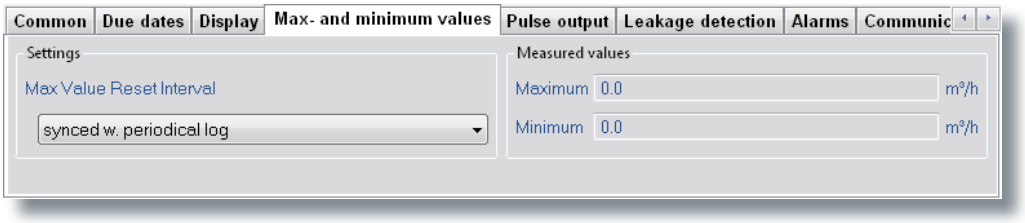


Fig. 54 : Tab "Max.- and minimum values" [03-003]

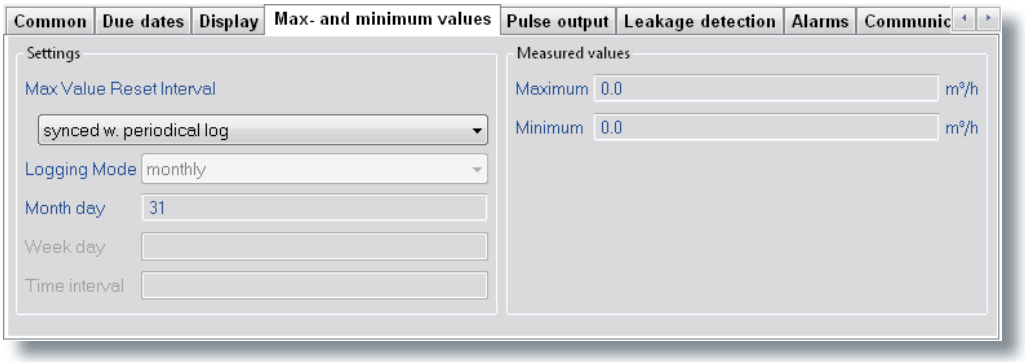


Fig. 55 : Tab "Max.- and minimum values" [04-005]

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Max value reset interval	Definition of the data collection interval After clicking "synced w. periodical log" the max.- and minimum value with the periodical log is synchronised with the chosen time interval.	🕮	☑	☑
Measured values	Display of the max. and minimum flow volume at the selected time.	🕮	🕮	🕮

Max. value reset interval

You can define the following intervals:

- 1 day
- 1 week
- 2 weeks
- 3 weeks
- 4 weeks
- 1 month
- 2 months
- 3 months
- 6 months

9.2.5 Pulse output

You can configure two pulse outputs via this tab. However, these are not activated for the device versions Radio, L-Bus and M-Bus.

For detailed information on the configuration of the pulse outputs refer to the original operating instructions of the connected device.

Contents

- Pulse output 1 and 2

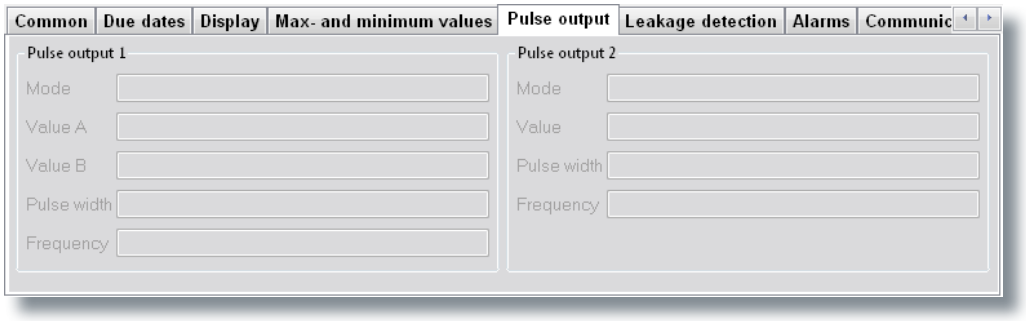


Fig. 56 : Tab "Pulse output"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Pulse output 1	The pulse output 1 is used for the selection of the mode volume, forward volume, return volume, forward volume (high resolution) or volume (high resolution).	📖	☑	☑
	By means of **Value A** the volume per pulse can be selected (only if forward volume, return volume, volume present are selected)	☑	☑	☑
	Pulse width (can only be varied if forward volume (high resolution), volume (high resolution) are selected).	📖	☑	☑
Pulse output 2	Pulse output 2 serves to send a further pulse signal (forward volume, return volume, direction signal, error).	📖	☑	☑
	By means of **Value** the volume per pulse can be selected (only if forward volume or return volume present are selected)	☑	☑	☑

9.2.6 Leakage detection

You can use this tab to define the interval for the automatic detection of leakages in the system and to send correspondig alarm messages.

Contents

- Q_3 (Display of the nominal flow rate)
- Water

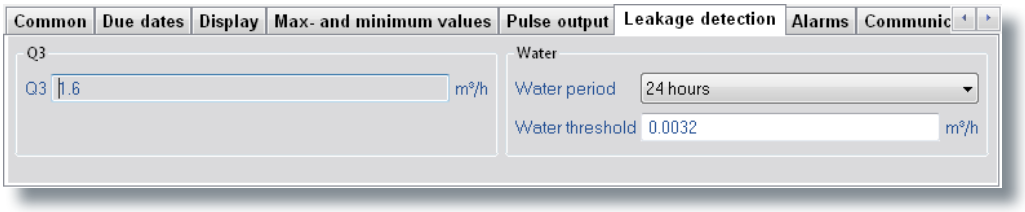


Fig. 57 : Tab "Leakage detection"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Interval	Definition of the monitoring interval	[03-003]	☑	☑
Leakage detection	Definition of the minimum flow rate in the selected monitoring interval. If the selected minimum flow in the selected monitoring interval is exceeded, a leak is signalled.	☑ [04-005]		

Q_3 Here is the nominal flow rate of the device shown.

Water An interval and a definition for the capturing of the leak flow volume are necessary for the detection of the leak flow rate. The device will record a possible loss depending on the current flow rate and the nominal value during the interval.

Interval You can choose the following intervals for leakage detection:

- 1 hour
- 2 hours
- 3 hours
- 4 hours
- 6 hours
- 8 hours
- 12 hours
- 24 hours

9.2.7 Alarms

Use this tab to define which alarms will be shown on the display of the device, and for which period of time.

Contents

- Alarm settings
- Alarm detection

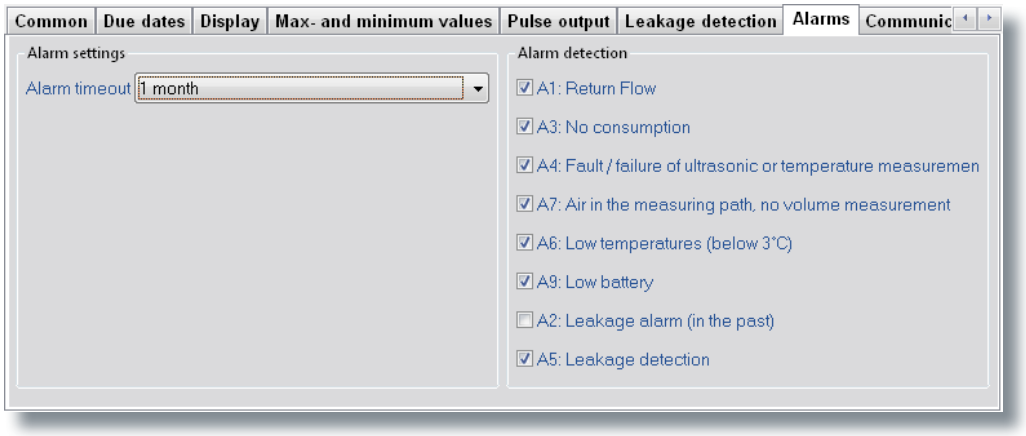


Fig. 58 : Tab "Alarms" [03-003]

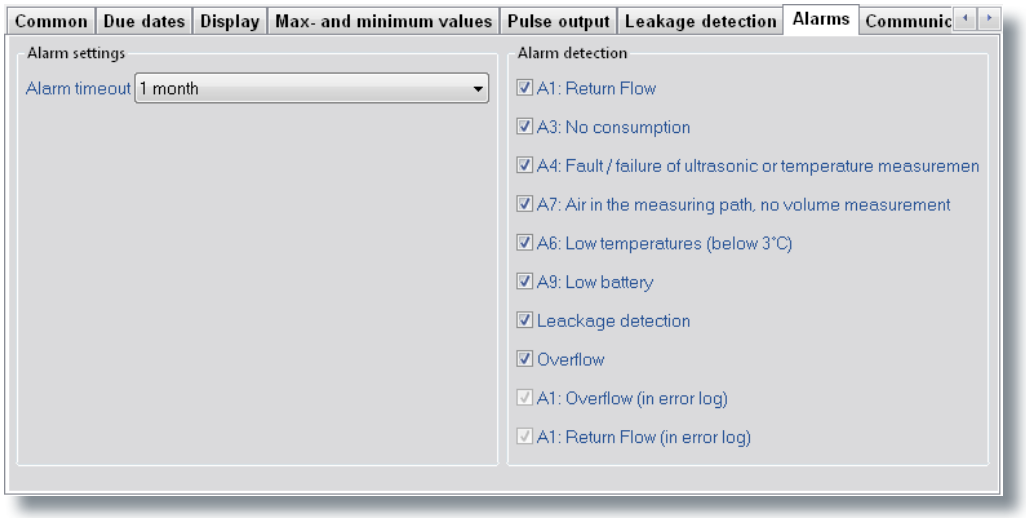


Fig. 59 : Tab "Alarms" [04-005]

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Maximum alarm duration	The maximum alarm duration of the device can be set here	🕮	☑	☑
Alarm detection	Selection of the alarm messages which are supposed to be displayed on the device			

Alarm settings You can choose the following values:

- off
- 1 day
- 1 week
- 2 weeks
- 3 weeks
- 4 weeks
- 1 month
- 3 months
- 6 months
- 8.5 months

Alarm detection You can choose the following alarm codes:

- A1: Return flow
- A3: No consumption
- A4: Fault/failure of ultrasonic or temperature measurement
- A7: Air in the measuring path, no volume measurement
- A6: Low temperatures (below 3 °C)
- A9: Low battery
- A2: Leakage alarm (in the past) (only 03-003)
- A5: Leakage alarm
- AH: Overload alarm (only 04-005)

9.2.8 Communication (only version 03-003)

Use this tab for the definition of the telegram, which will be transmitted.

The protocol can be programmed according to the requirements of the customer. Apart from the protocols, even the specific parameters for the internal radio of the device are set.

Contents

- Telegram length
- Internal radio communication
- Telegram contents

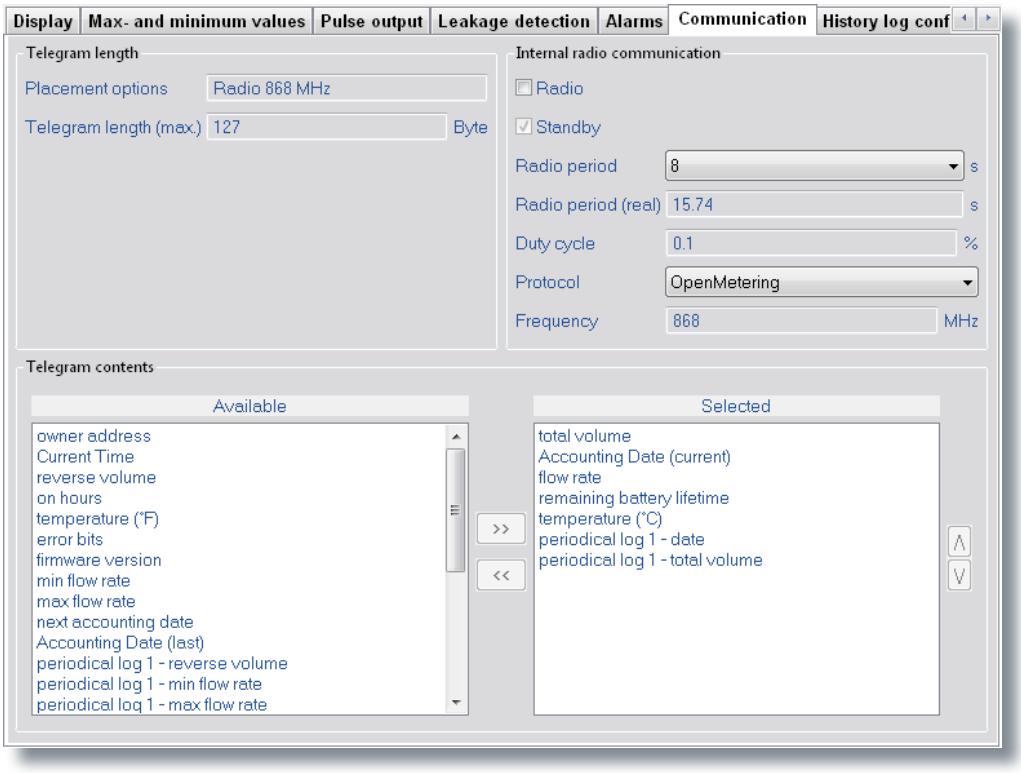


Fig. 60 : Tab "Communication" [03-003]

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Telegram length	Display of the modules and the set telegram length	🕮	🕮	🕮
Internal radio communication	Configuration data of the internal radio communication	🕮	☑	☑
Telegram contents	Definition of the telegram contents and its order			

Telegram length

The length of the telegrams is calculated and shown. For the use as radio telegram, a maximal length of 150 bytes is possible. The communication with M-Bus allows a telegram length of up to 250 bytes.

The length of the radio telegram also affects the transmit interval. A duty cycle of 0.1 % is specified for this by legislation. The transmit interval can be intentionally increased, however, in order to avoid collision in radio traffic. A range between 8 s and 254 s is possible.

Internal radio communication

Here you can activate the radio communication for internal radio.

The Standby parameter indicates that the device is in the factory setting. If the meter is then filled with water for 2 minutes, the meter activates radio automatically. The radio will be activated permanently, if the device detects water for 3 hours without interruption. If the water is interrupted within 3 hours, the meter returns to Standby.

The radio protocol corresponds to the Hydrometer standard or the Open Metering standard and is encrypted. A transmission frequency of 868 MHz or 434 MHz is shown.

Telegram contents

You can configure the telegrams and sort the order of the content according of the available contents of the telegrams.

As soon as the maximum allowed length of a telegram is reached, a further adding of contents is not longer possible.

9.2.9 Communication (radio) - (only version 04-005)

Use this tab for the definition of two telegrams, which should be transferred.

The protocol is different for the two channels and can be programmed according to the requirements of the customer. Each channel has its own primary address. Apart from the protocols, even the specific parameters for the internal radio of the device are set.

Contents

- Placement and telegram lengths radio
- Internal radio communication
- Mobile telegram contents
- Fixed telegram contents

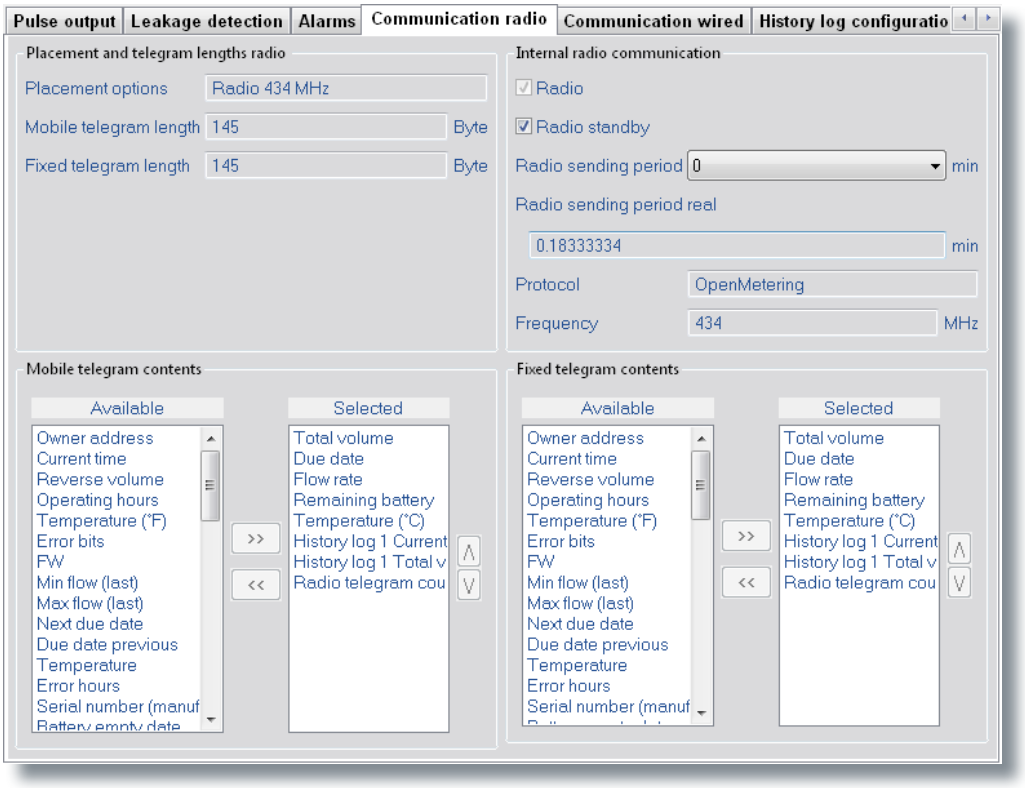


Fig. 61 : Tab "Communication radio" [04-005]

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Telegram lengths	Display of the modules and the set telegram length	🕮	☑	☑
Internal radio communication	Configuration data of the internal radio communication			
Radio interval	Selection of the interval for the data transfer via radio			
Mobile telegram contents	Definition of the telegram content and its order	🕮	☑	☑
Fixed telegram contents	Definition of the telegram content and its order			

Radio sending period

You can define the following radio intervals:

- 1 minute
- 2 minutes
- 5 minutes
- 10 minutes
- 15 minutes
- 30 minutes
- 60 minutes
- 120 minutes
- 240 minutes

Telegram length

The length of the telegrams is calculated and shown. For the use as radio telegram, a maximal length of 150 bytes is possible. The communication with M-Bus allows a telegram length of up to 250 bytes.

The length of the radio telegram also affects the transmit interval. A duty cycle of 0.1 % is specified for this by legislation. The transmit interval can be intentionally increased, however, in order to avoid collision in radio traffic. A range between 8 s and 254 s is possible.

Internal radio communication

Here you can activate the radio communication for internal radio.

The Standby parameter indicates that the device is in the factory setting. If the meter is then filled with water for 2 minutes, the meter activates radio automatically. The radio will be activated permanently, if the device detects water for 3 hours without interruption. If the water is interrupted within 3 hours, the meter returns to Standby.

The radio protocol corresponds to Read Data or Open Metering and is encrypted. A transmission frequency of 868 MHz or 434 MHz is shown.

Telegram contents

You can configure the telegrams and sort the order of the content according to the available contents of the telegrams.

As soon as the maximum allowed length of a telegram is reached, a further adding of contents is not longer possible.

9.2.10 Communication (wired) (only version 04-005)

Use this tab for the definition of the telegram (customer telegram, application reset 15), which is supposed to be transferred. The maximum telegram length has 255 bytes.

Contents

- Placement
- Telegram lengths wired
- Wired telegram content

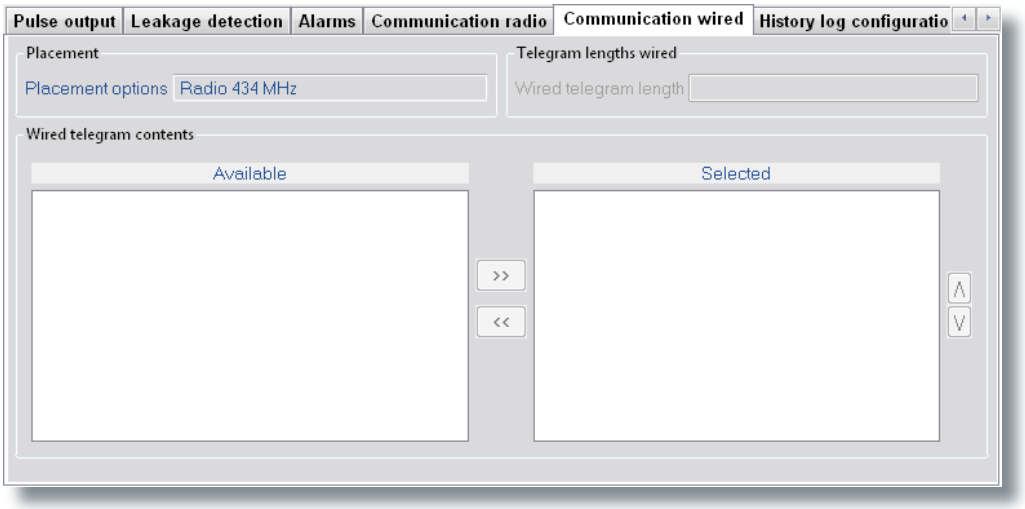


Fig. 62 : Tab "Communication wired" [04-005]

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Placement option	Definition of the wire interface			
Telegram lengths wired	Telegram length of the selected telegram content in byte			
Wired telegram contents	Definition of the telegram content and its order			

9.2.11 History log configuration

Use this tab to define content and storage interval of the periodical log.

To display the content you have to read the error log (perform command "Read Periodical Log")

The log memories have only a limited space available. If this space is full, the oldest entry is overwritten by the newest entry (FiFo).

Contents

- Periodical log

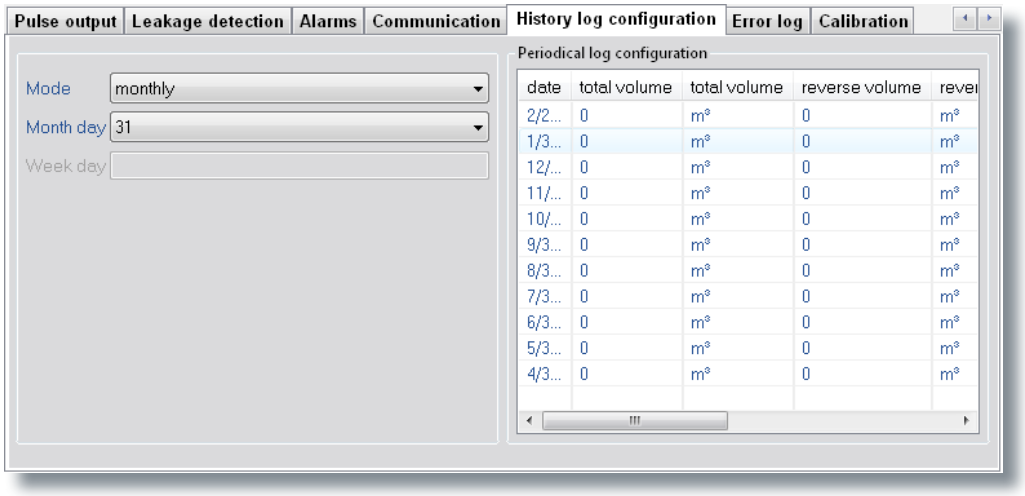


Fig. 63 : Tab "History log configuration" [03-003]

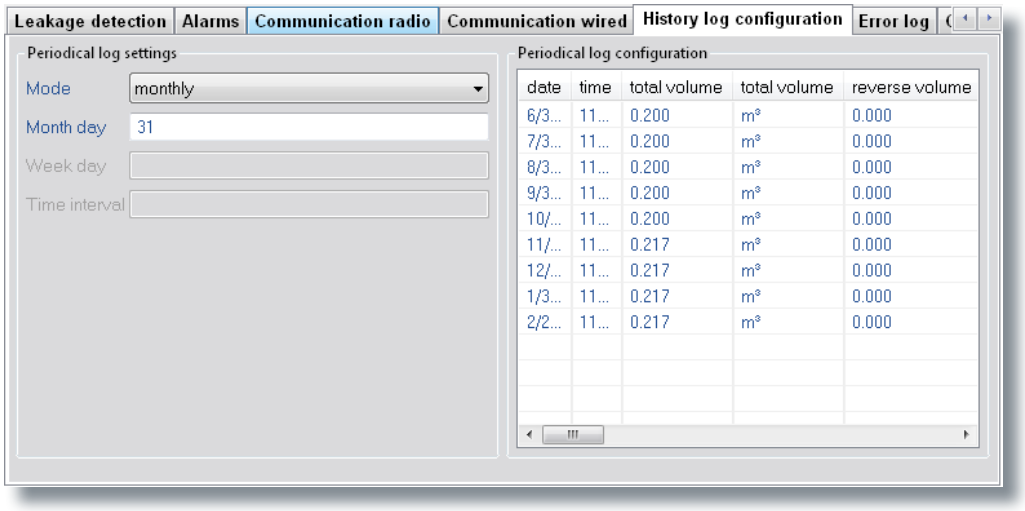


Fig. 64 : Tab "History log configuration" [04-005]

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Periodical log	Definition of the cyclic storage interval	🕮	☑	☑

Periodical log

You can select the following memory modes:

- monthly
- weekly
- daily
- daily (synchr. w. MIN/MAX Reset) (only for 03-003)
- hourly (only for 04-005)

Please keep in mind, the shorter the storage interval mode, the more data are present. Therefore more storage capacity is required.

The log memories have only a limited space available. If this space is full, the oldest entry is overwritten by the newest entry (FiFo).

The following contents are written in the periodical log:

- Date
- Volume
- Return volume
- Max. flow
- Min. flow

Additional contents (only for 04-005)

- Measured values
- Operating days
- Temperature (Medium)
- Status
- Error hours
- Forward volume
- Temperature (environment)
- Overflow time

You can export the content of the periodical log as CSV file (perform command "Export Periodical Log"). The CSV-file is stored in the folder "Data" of the program directory IZAR_SET/IZAR.

9.2.12 Error log

To display the content you have to read the error log (perform command <Read Error Log>).

An error is not stored and indicated until it has been registered for longer than 6 minutes without interruption.

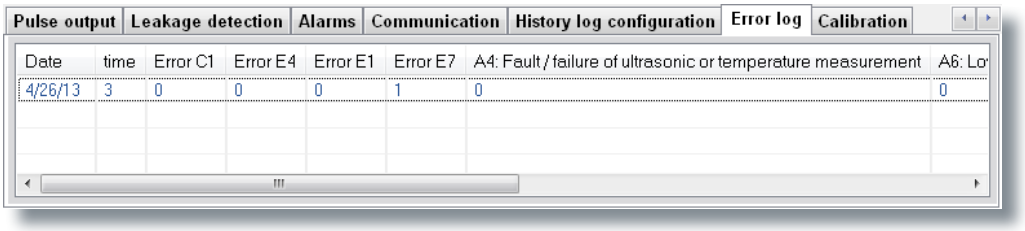


Fig. 65 : Tab "Error log"

This overview shows all occurred errors. Date and time are also shown.

Which error has occurred, is indicated by 0 or 1.

Explanations:

0 = Error not occurred

1 = Error occurred

All errors are stored, even if several errors occur simultaneously.

You can export the contents of the error log as CSV file (perform command <Export Error Log>). The CSV-file is stored in the folder "Data" of the program directory IZAR_SET/IZAR.

Error table

Error	Error description	Remedy
C 1	Basic parameter error in flash or RAM	Replace meter
E 1	Temperature of medium too high or too low	Water temperature exceeds 90 °C or is below 3 °C
E 4	Hardware error Ultrasonic transducer defective or short-circuit	Replace meter
E 5	Communication momentarily not possible	Repeat later
E 7	Air in the supply system, no flow rate measurement	
EH	Overload flow rate	

9.2.13 Calibration

This tab displays data which are important for testing laboratories.

A modification of these values is only possible by testing laboratories

Contents (03-003)

- Values (high resolution)
- Units
- Adjustment
- Test pulse output (optical)
- Device interna
- Battery replacement

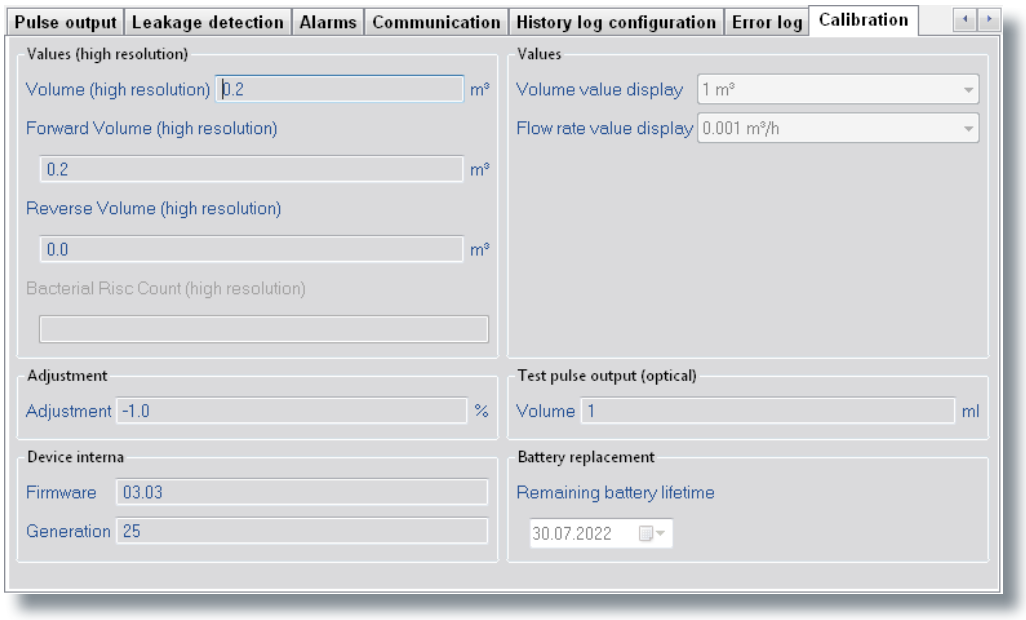


Fig. 66 : Tab "Calibration" [03-003]

Contents (04-005)

- Values (high resolution)
- Test pulse output (optical)

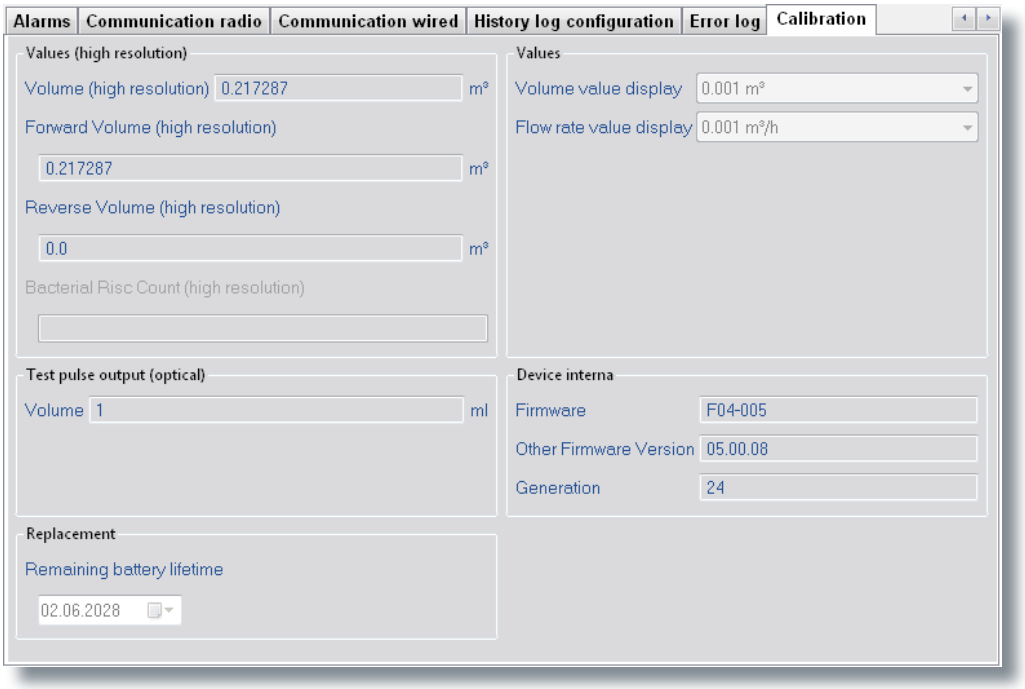


Fig. 67 : Tab "Calibration" [04-005]

9.3 Menu bar "Command"

When performing the menu "Command" via the menu bar, several device-specific functions (depending on authorization level) are available.

Command	Description
Clear alarms	All alarms are cleared
Read error log	The log of the device is read.
Read periodical log	The data of the periodical logs are read.
Export error log	The corresponding log is saved as csv-file in the folder "Data" in the installation directory of IZAR@SET. The file name consists of the production number (secondary address) of the device, the name of the log memory and a 13-digit code.
Export periodical log	
Clear error log	The corresponding log is deleted.
Reset counters and logs	All counter readings and logs are deleted.
Export debug log (in case of error)	This command generates an encrypted diagnostic file which the customer support of Hydrometer can evaluate, if an error occurs. As many data as possible are read by the meter. This is the reason why this operation can last a very long time. Use this command only if an error occurs.

10 CORONA ER

10.1 General

All the configurations where you can execute IZAR@SET in connection with the electronic water meter CORONA ER and the opto head are described in this chapter.

You will find additional information for the device or the opto head in the separate instruction manuals. If these are not available, you can download them from the Diehl Metering Homepage.

Please enter the following address in your browser:

http://www.diehl.com/en/diehl-metering.html

Under the heading "Products & Solutions" \ "Product-Download" an overview opens, where you can find all available documents for downloading.

The following requirements must be met:

- Your device is connected to IZAR@SET (for more information refer to "3.4 Connecting devices to IZAR@SET" on page 18.)

10.2 Tabs

This chapter describes which configurations you can execute on which authorization level.

Depending on the access rights you have:

- read-only access rights 🕮
- writing access ☑

As soon as your device is connected to IZAR@SET, the device-specific tabs are shown.

Depending on individual configurations further definition options are enabled.

If different settings are available, it is also necessary to enter values. In this case, the input fields are marked in YELLOW.

10.2.1 Common

The tab "Common" shows all the info regarding the connected device.

Contents

- Device
- Radio
- Date and time
- Due date
- Device

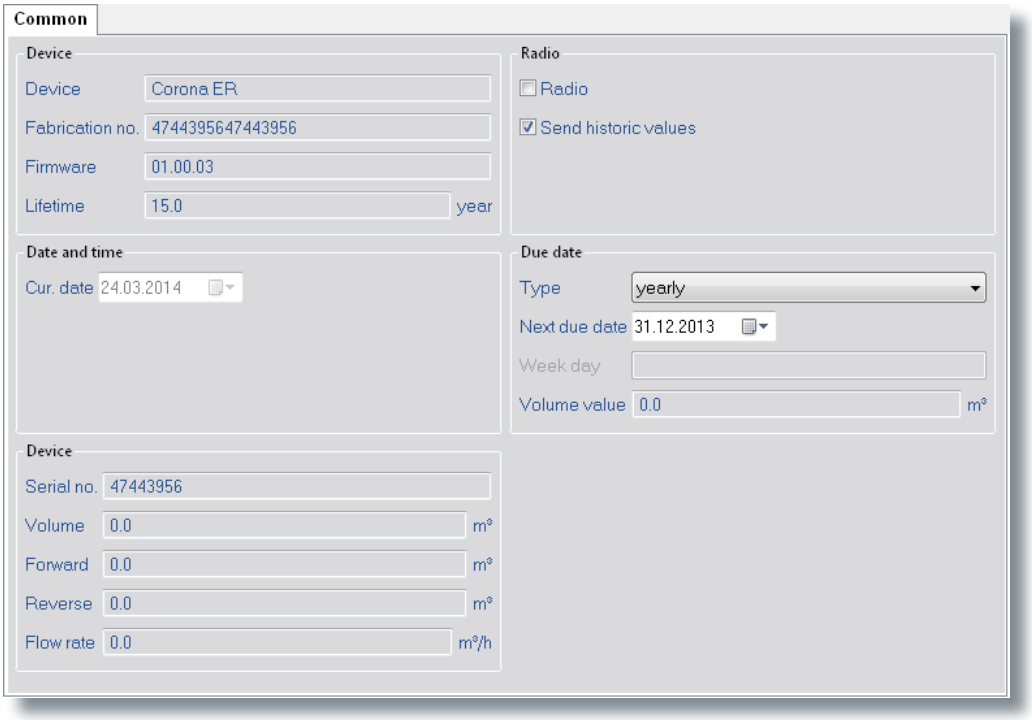


Fig. 68 : Tab "Common"

10.2.2 Device

Fig. 69 : Section "Device"

Here you receive general information about the connected device (type of device, serial number, firmware, lifetime).

10.2.3 Radio

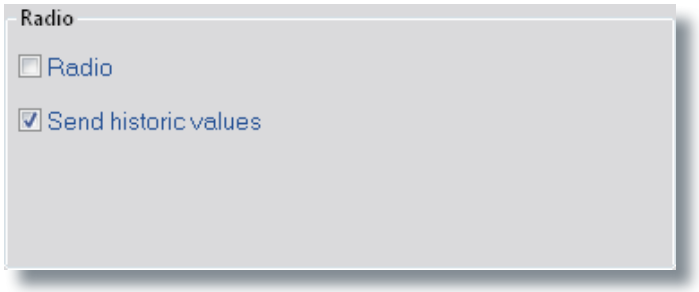


Fig. 70 : Section "Radio"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Radio	Activating and deactivating of the radio. If the radio is deactivated, the device stays operational.	🕮	☑	☑
Send historic values	For the activation of the radio telegram with 3 due date values (otherwise only one due date will be sent)			

If the radio is deactivated, the meter is fully operational, but no data will be transmitted by radio.

10.2.4 Date and time

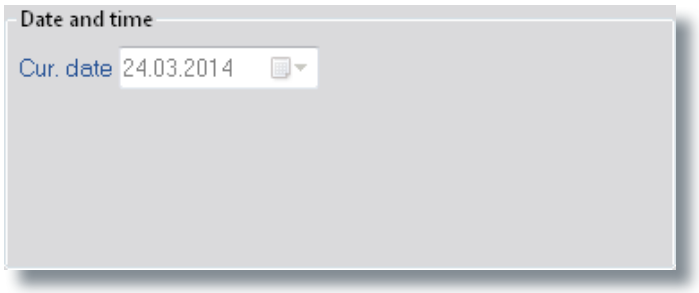


Fig. 71 : Section "Date and time"

Here the current date is shown.

10.2.5 Due date

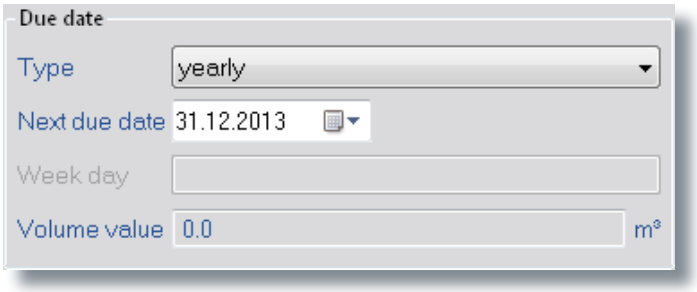


Fig. 72 : Section "Due date"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Due date	Definition of the period of time or the day when the values will be captured. The following can be selected: ■ Yearly ■ Monthly ■ Weekly	🕮	☑	☑

10.2.6 Device

Fig. 73 : Section "Device"

Here you receive general information about the connected device (serial number, volume, forward, reverse, flow rate).

10.3 Reading meter readings

The meter sends automatically every 64 seconds the number of the meter, the meter reading as well as other operation information.

The capturing of the data can be done by a mobile or stationary receiver.

The data can also be read on the display.

11 AERIUS

11.1 General

All the configurations you can execute with IZAR@SET in connection with the micro thermal household gas meter AERIUS and the opto head are described in this chapter.

Depending on the version, the device is equipped with different communication interfaces:

- Optical IrDA (present in every version)
- Radio wireless M-Bus 868 MHz OMS®
- M-Bus wired

Depending on the version the images in IZAR@SET may vary.

You will find additional information for the device or the opto head in the separate instruction manuals. If these are not available, you can download them from the Diehl Metering Homepage.

Please enter the following address in your browser:

http://www.diehl.com/en/diehl-metering.html

Under the heading "Products & Solutions" \ "Product-Download" an overview opens, where you can find all available documents for downloading.

The following requirements must be met:

- Your device is connected to IZAR@SET (for more information refer to "3.4 Connecting devices to IZAR@SET" on page 18.)

11.2 Tabs

This chapter describes which configurations you can execute on which authorization level.

Depending on the authorization level you have:

- read-only access rights 🕮
- writing access ☑

As soon as your device is connected to IZAR@SET, the device-specific tabs are shown.

Depending on individual configurations further definition options are enabled.

If different settings are available, it is also necessary to enter values. In this case, the input fields are marked in YELLOW.

11.2.1 Common

This tab shows general data for the connected device.

Contents

- Device
- Date and time
- Device state
- Metering
- Adresses

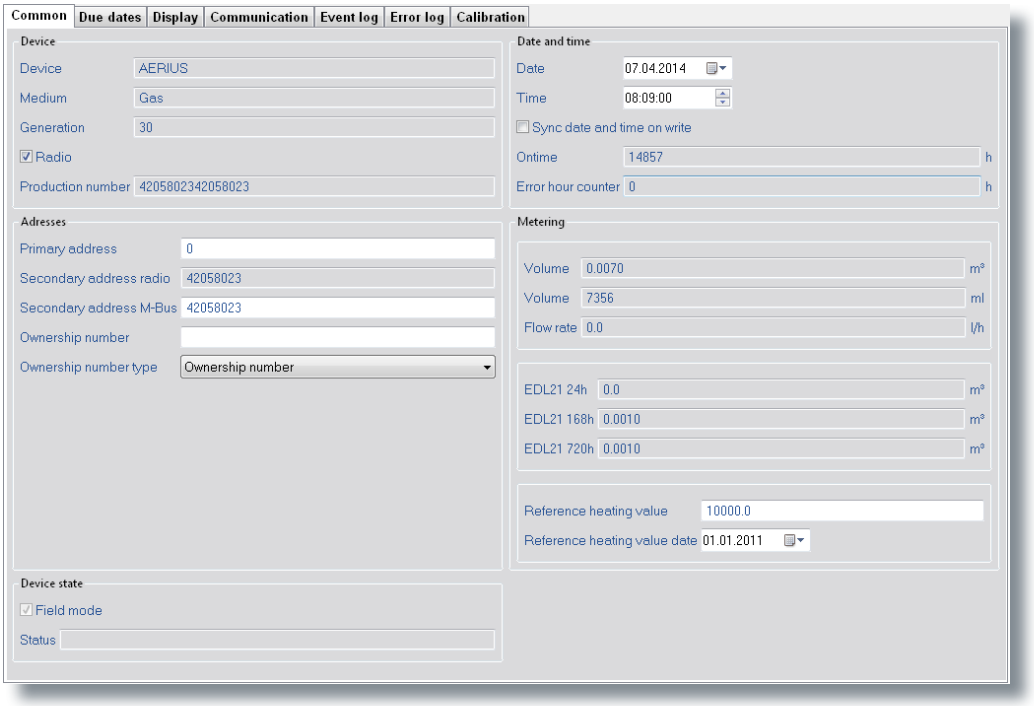


Fig. 74 : Tab "Common"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Date	Entry of an optional date	🕮	☑	☑
Time	Entry of an optional time			
Sync date and time on write	When saving, the date of the device is synchronized with the date of the PC.			
Reference heating value	The reference heating value is determined by the supplier as average value over a certain period of time.			
Date of the reference heating value	Entry of an optional date for the capture of the reference heating value			
Primary address	Primary communication address for M-Bus module			
Secondary address M-Bus	Secondary communication address for M-Bus module			
Ownership number	The ownership number is determined by the supplier as internal identification number.	🕮	☑	☑
Ownership number type	Selection of the ownership number type: ■ Meter point ID ■ Ownership number			

11.2.2 Due dates

Use this tab to define a due date for the accumulation of the captured values.

As default the 31.12 is set as due date.
The values of the due date refer to the beginning of the day, i.e. 0:00:00 h for the displayed day.

Contents

- Due date 1 / 2 / 3 settings
- Due date 1 / 2 / 3 current values

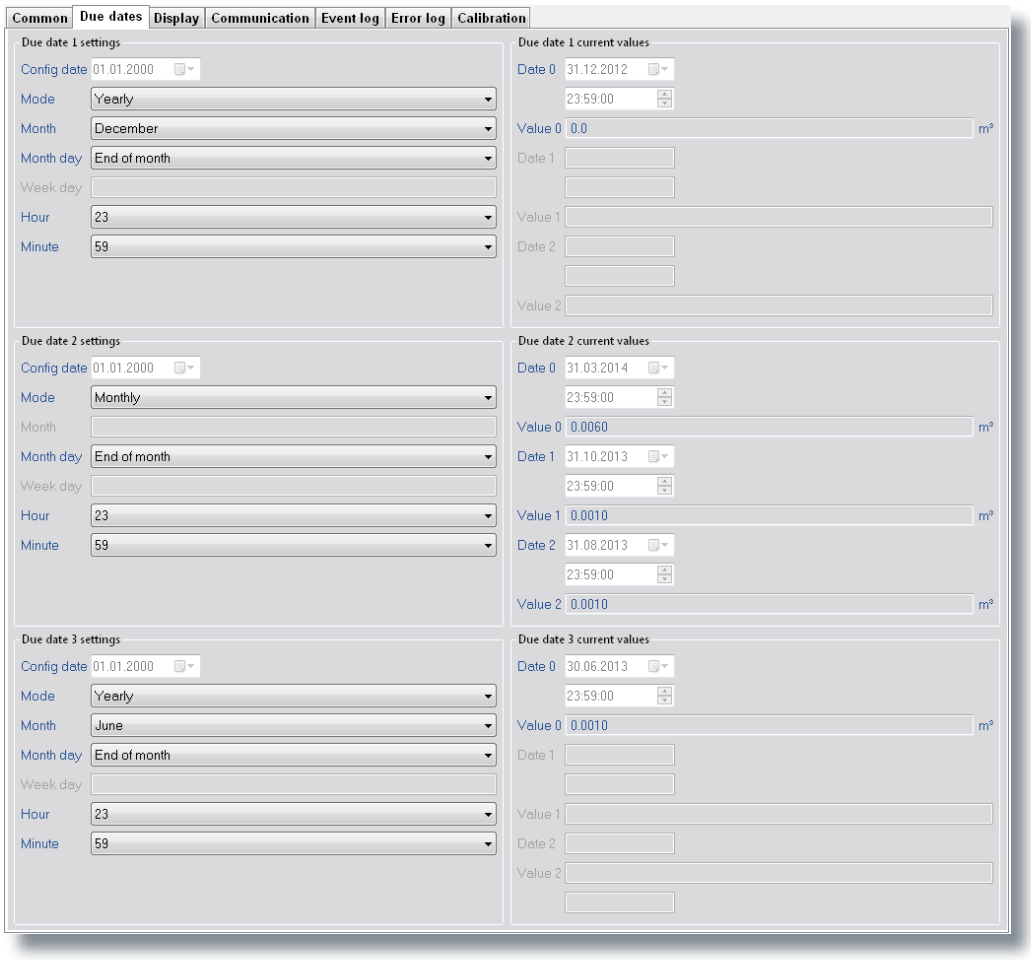


Fig. 75 : Tab "Due dates"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Due day settings	Definition of the period of time or the day when the values will be retrieved	🕮	☑	☑
Due day current values	Display of retrieved due day values		🕮	🕮

Due day settings

You can make the following settings for the due date:

- daily (hour and minute)
- weekly (weekday, hour and minute)
- monthly (day in month, hour and minute)
- yearly (month, day in month, hour and minute)

11.2.3 Display

Use this tab to define a loop (order of the menu), which can be retrieved via the device.

You can select them by means of the corresponding lists of the available device menus and sort them in display order.

Contents

- Display contents
- Texts

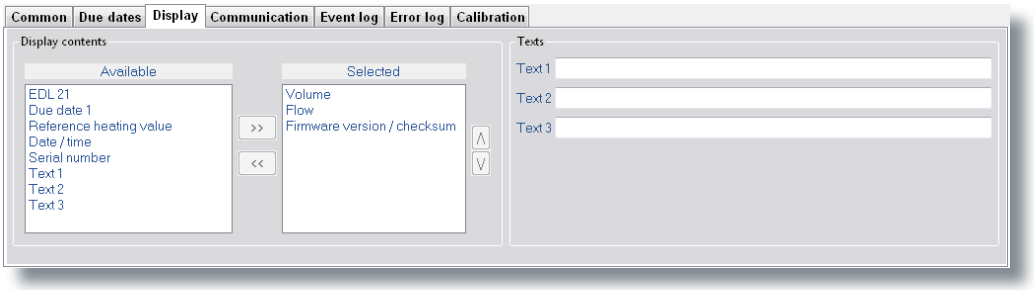


Fig. 76 : Tab "Display"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Display contents	Display of the available content for defining the desired display order	🕮	☑	☑
Texts	Three freely definable text fields for the entry of additional info			

The following fields are automatically selected. They are predefined and can not be removed.

- Volume
- Flow
- Firmware version / checksum

11.2.4 Communication

Use this tab to select from two radio profiles which will be used for transfer.

Contents

- Radio
- Start-by-pulse
- Radio profile

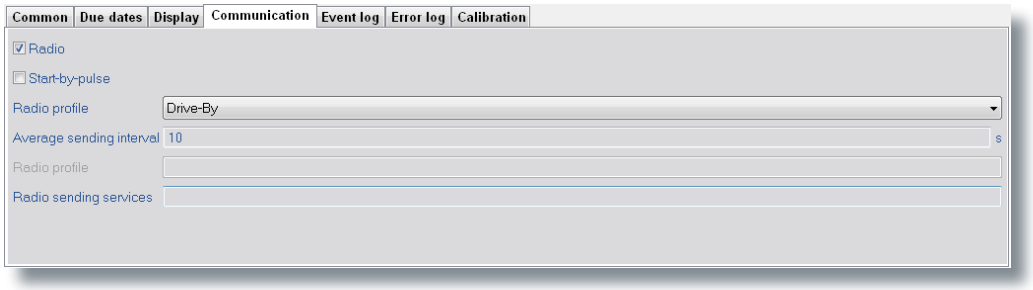


Fig. 77 : Tab "Communication"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Radio	Activating wireless	🕮	☑	☑
Start-by-pulse	Automatic activation of the communication after the flow of 50 litre gas			
Radio profile	Selection of the two radio profiles ■ Fixed network (sending interval 3 minutes) ■ Drive-By (sending interval 10 seconds)			

11.2.5 Event log

To display the contents you have to read the event log (command "Read logs")

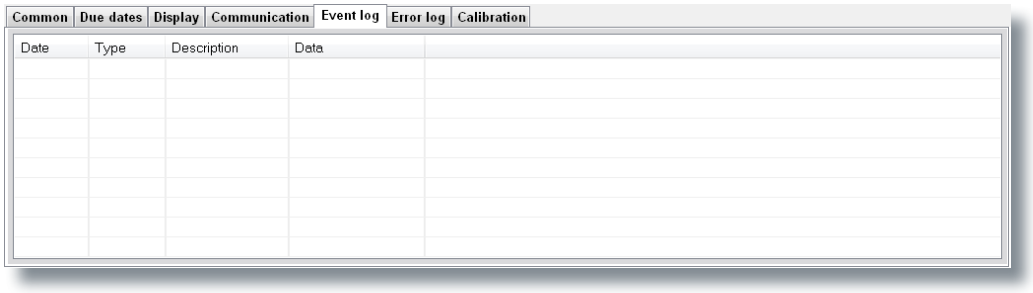


Fig. 78 : Tab "Event log"

You will find all events occurred in this overview, including display of date and type of event.

You can export the contents of the event log as CSV-file (command "Export logs") The CSV-file is stored in the folder "Data" of the program directory IZAR_SET/IZAR.

Event table

Type	Description	Additional info
E1	Air detection	
F6	Co-processor communication error	The co-processor doesn't respond within microseconds, because it is busy.

11.2.6 Error log

To display the content you have to read the error log (perform command "Read logs")

An error is eventually stored and displayed when the error is displayed longer than 6 minutes without interruption.

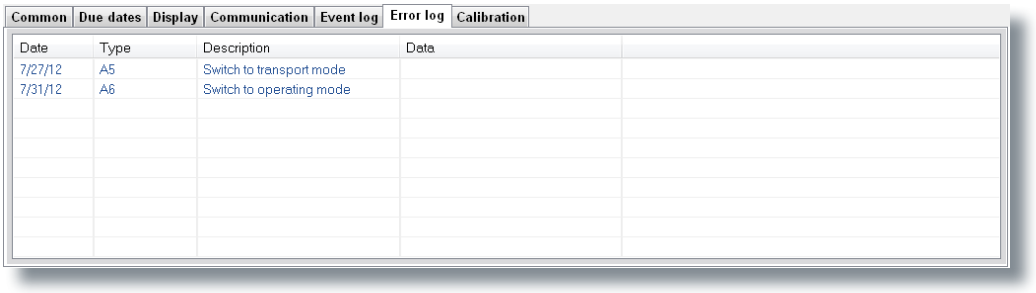


Fig. 79 : Tab "Error log"

You will find all errors occurred in this overview, including display of date and type of error.

All errors will be stored, even if several errors occur at the same time.

You can export the content of the error log as CSV-file (perform command "Export logs"). The CSV-file is stored in the folder "Data" of the program directory IZAR_SET/IZAR.

Error table

Type	Description	Remedy
A 5	Activate transport mode	
A 6	Activate operation mode	
A 9	Error log full	Check meter
B 4	Sensor diaphragm is faulty	Replace meter
B 7	Permanent sensor issue	Replace meter
C 0	Wrong volume checksum	Suspicion of manipulation or technical defect Replace meter
C 1	Wrong firmware checksum	Suspicion of manipulation or technical defect Replace meter
C 2	Wrong parameter checksum	Suspicion of manipulation or technical defect Replace meter
C 3	Wrong sensor-specific settings	Suspicion of manipulation or technical defect Replace meter
E 6	Fire alarm - temperature of gas exceeds 55 °C	Leave building and call the fire brigade

11.2.7 Calibration

This tab displays data which are important for testing laboratories.

A modification of these values is only possible by testing laboratories

Contents

- Device interna
- Battery replacement

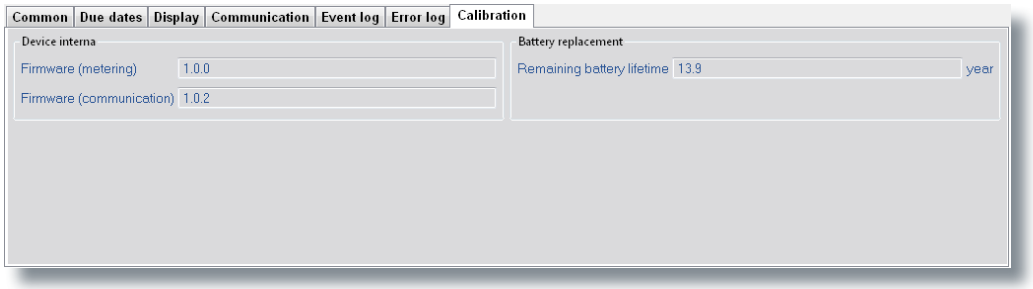


Fig. 80 : Tab "Calibration"

Choose the battery in the pull down menu which will supply voltage to the device. The date of replacement is automatically calculated and displayed.

Device interna

Here you receive information about:

- Firmware (metering)
- Firmware (communication)

Battery replacement

Here you receive information about the remaining battery lifetime.

The date of replacement is automatically calculated and displayed.

11.3 Menu bar "Command"

When performing the menu "Command" via the menu bar, several device-specific functions (depending on authorization level) are available.

Command	Description
Reset operation/error hour counter	The operation is only possible with legal calibration bridge.
Reset meter values	Meter readings are reset.
Reset EDL21 values	The operation is only possible with legal calibration bridge.
Export log	The contents of the event- and error log are exported as CSV-files. The CSV-files are stored in the folder "Data" of the program directory IZAR_SET/IZAR.
Start installation telegram	The installation telegram is sent by radio.
Read log	Reading of the data of the event- and error log which are stored in the device.
Export debug data	The contents of the event- and error log are exported as CSV-files. The files are stored in the folder "Data" of the program directory IZAR_SET/IZAR.

12 HYDRO RADIO

12.1 General

All the configurations you can execute with IZAR@SET in connection with the radio module HYDRO RADIO and the opto head are described in this chapter.

You will find additional information for the device or the opto head in the separate instruction manuals. If these are not available, you can download them from the Diehl Metering Homepage.

Please enter the following address in your browser:

http://www.diehl.com/en/diehl-metering.html

Under the heading "Products & Solutions" \ "Product-Download" an overview opens, where you can find all available documents for downloading.

The following requirements must be met:

- Your device is connected to IZAR@SET (for more information refer to "3.4 Connecting devices to IZAR@SET" on page 18.)

12.2 Tabs

This chapter describes which configurations you can execute on which authorization level.

Depending on the access level you have:

- read-only access rights 🕮
- writing access ☑

As soon as your device is connected to IZAR@SET, the device-specific tabs are shown.

Depending on individual configurations further definition options are enabled.

If different settings are available, it is also necessary to enter values. In this case, the input fields are marked in YELLOW.

12.3 HYDRO RADIO EXTERN Pulse

The radio module sends automatically every 8 seconds the number of the meter, the meter reading as well as other operation information.
The capturing of the data can be done by a mobile or stationary receiver.

The tab "All parameters" shows you all the info regarding the connected device.

Contents

- Common
- Radio
- Due date
- Meter
- Pulse
- Alarms

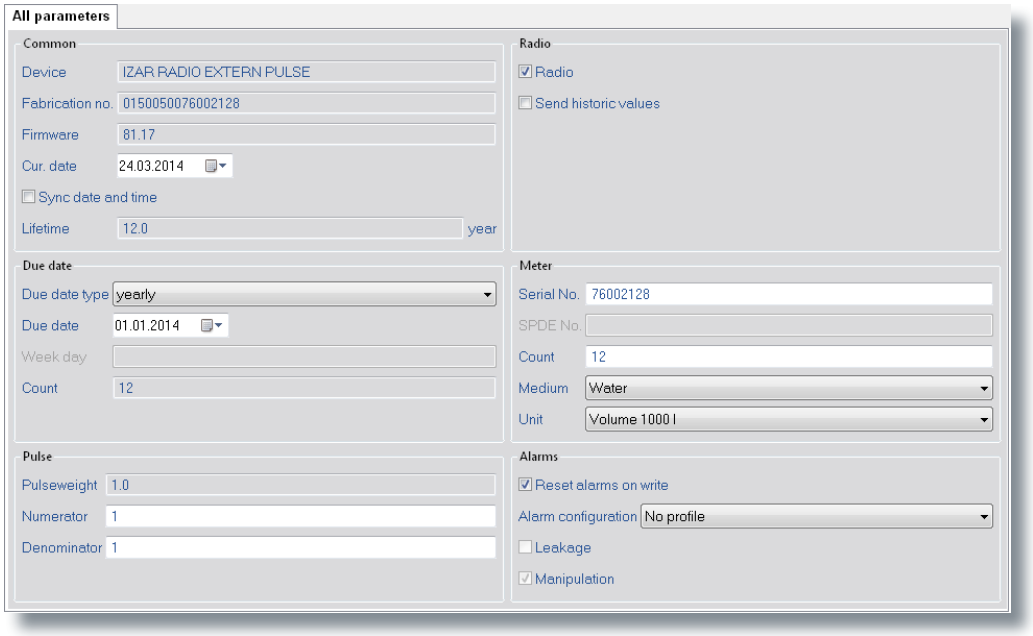


Fig. 81 : Tab "All parameters"

12.3.1 Common

Fig. 82 : Section "Common"

Here you receive general information about the connected device (type of device, fabrication number, firmware, lifetime).

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Cur. Date	Entry of an optional date	🕮	☑	☑
Sync. date and time	When saving, the date of the device is synchronized with the date of the PC.			

12.3.2 Radio

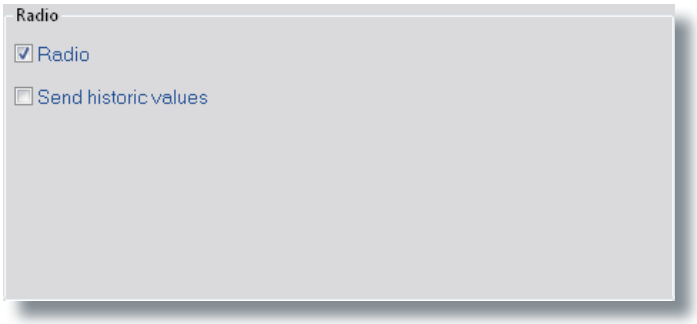


Fig. 83 : Section "Radio"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Radio	Activating and deactivating of the radio. If the radio is deactivated, the device stays fully operational.	🕮	☑	☑
Send historic values	For the activation of the radio telegram with 3 due date values (otherwise only one due date will be sent)			

12.3.3 Due date

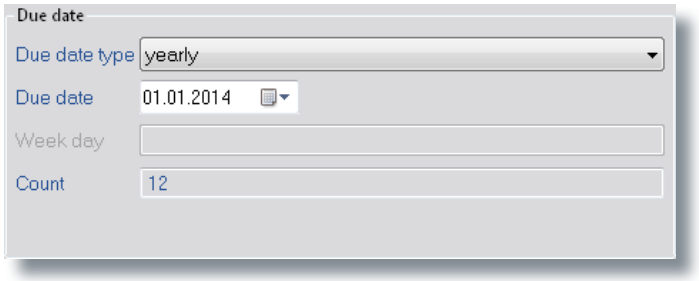


Fig. 84 : Section "Due date"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Due date	Definition of the period of time or the day when the values will be captured. The following can be selected: ■ Yearly ■ Monthly ■ Weekly	🕮	☑	☑

12.3.4 Meter

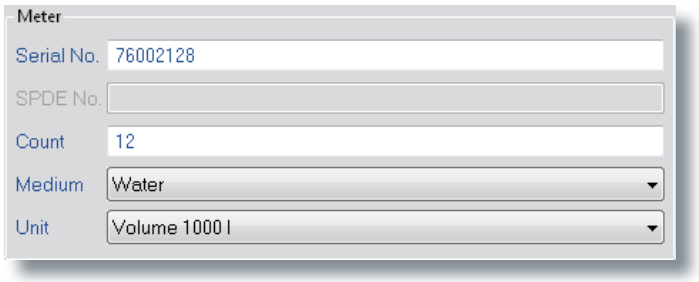


Fig. 85 : Section "Meter"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Serial No.	Entry of the serial number of the connected device	🕮	☑	☑
Count	Entry of the current count			
Medium	Selection of the medium to be measured			
Unit	Selection of the unit according to the medium to be measured			

Medium The following media can be selected in the expert or test lab level:

- A/D-converter
- bidirectional repeater
- breaker (elec.)
- calorific value
- carbon dioxide
- cold water
- communication controller
- compressed air
- cooling meter forward
- cooling meter reverse
- customer unit
- double measurement value (warm/ cold) water meter electricity
- garbage
- gas
- gas detector
- heat
- heat-/cooling meter
- heat cost allocator
- heater forward
- hot water (≥ 90 °C)
- oil
- other medium
- pressure
- radio converter system side
- reserved
- valve (gas or water)
- romsensor
- smoke detector
- steam
- bus/system component
- unidirectional repeater
- unknown medium
- hot water (30 °C … 90 °C)
- sewage
- water

Unit The following units can be selected in the expert or test lab level:

- energy 0.001 Wh … 100,000 Wh
- energy 1 J … 100,000,000 J
- volume 0.001 l … 100,000 l
- mass 1 g … 100,000 g
- mass 1,000,000 TON … 1,000,000,000,000,000 TON
- duty factor 1 s
- duty factor 1 min
- duty factor 1 h
- duty factor 1 d
- operating time 1 s
- operating time 1 min
- operating time 1 h
- operating time 1 d
- power 0.001 W … 100,000 W
- power 1 J/h … 100,000,000 J/h
- flow 0.001 l/h … 100,000 l/h
- flow 0.0001 l/min … 10,000 l/min
- flow 0.000001 l/s … 100 l/s
- mass flow 1 g/h ... 100,000,000 g/h
- flow temperature 0.001 °C … 10 °C
- return flow temperature 0.001 °C … 10 °C
- temperature difference 0.0001 K … 10 K
- ambient temperature 0.001 °C … 10 °C
- pressure 0.001 bar … 10 bar
- heat cost allocator 1
- average duration 1 s
- average duration 1 min
- average duration 1 h
- average duration 1 d
- current duration 1 s
- current duration 1 min
- current duration 1 h
- current duration 1 d
- fabrication no.
- (extended) identification 1
- bus address 1
- any VIF 1
- manufacturer specific
- UNKNOWN 1 s

12.3.5 Pulse

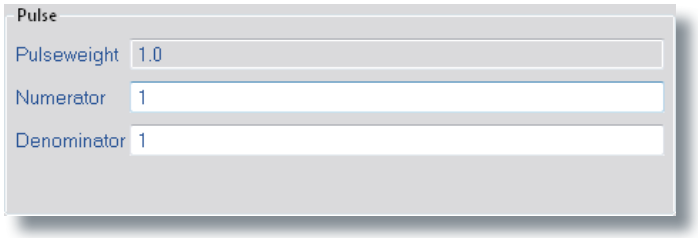


Fig. 86 : Section "Pulse"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Numerator	Input of the factor by which each pulse received by the radio module (according to the selected unit) is multiplied.	🕮	☑	☑
Denominator	Input of the factor by which each pulse received by the radio module (according to the selected unit) is divided.			

Example

You set 10 as numerator and 1 as denominator, i.e. 10/1=10.

Select volume 10 litres as unit in the section meter.

The pulse value is therefore 100 litres. This means that in the event of every impulse entering the module, the count increases by 100 litres.

12.3.6 Alarms

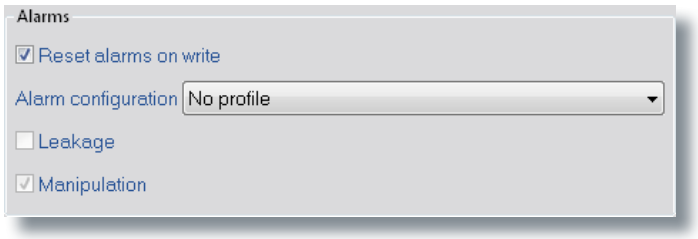


Fig. 87 : Section "Alarms"

All upcoming alarms are shown in this section.

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Reset alarms on write	Reset of the upcoming alarms	🕮	☑	☑

12.4 HYDRO RADIO EXTERN RS 232 / L-Bus

The radio module sends automatically every 8 ... 16 seconds the number of the meter, the meter reading as well as other operation information.
The capturing of the data can be done by a mobile or stationary receiver.

The tab "All parameters" shows you all the info regarding the connected device.

Contents

- Common
- Radio
- Meter

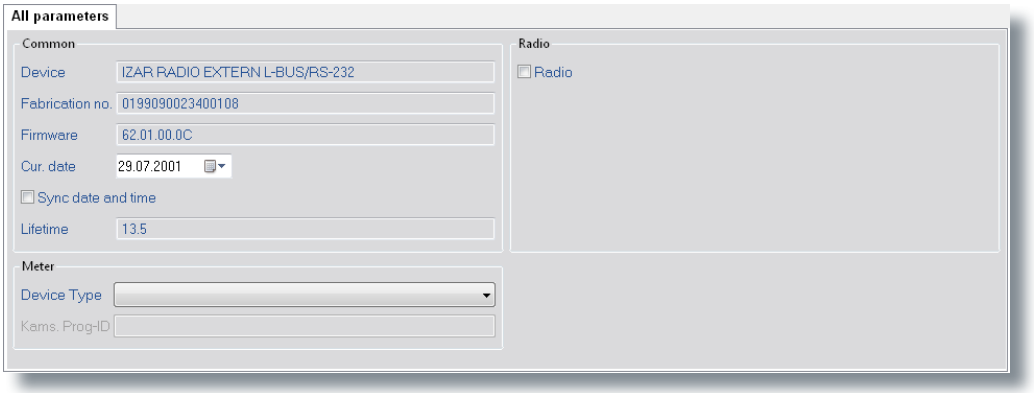


Fig. 88 : Tab "All parameters"

12.4.1 Common

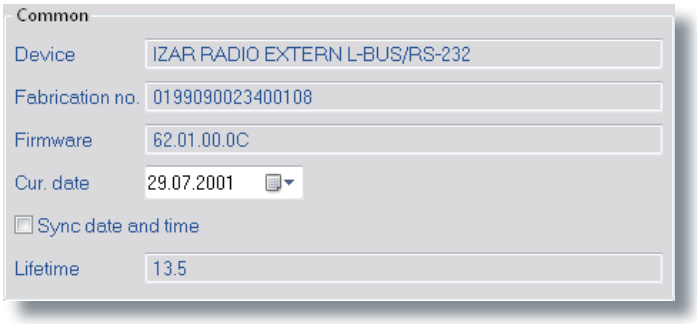


Fig. 89 : Section "Common"

Here you receive general information about the connected device (type of device, fabrication number, firmware, lifetime).

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Current Date	Entry of an optional date	🕮	☑	☑
Sync. date and time	When saving, the date of the device is synchronized with the date of the PC.			

12.4.2 Radio

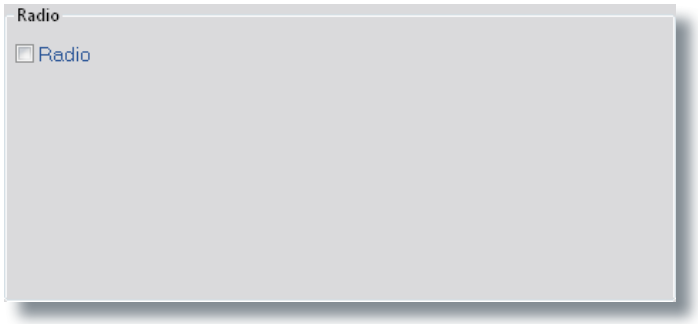


Fig. 90 : Section "Radio"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Radio	Activating and deactivating of the radio. If the radio is deactivated, the device stays fully operational.	🕮	☑	☑

12.4.3 Meter

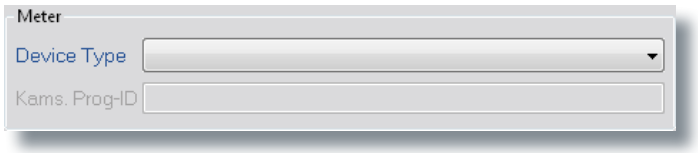


Fig. 91 : Section "Meter"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Device type	Selection of connected devices	🕮	☑	☑

The following devices can be selected in the Expert or Test Lab level:

- KAM_MC66_battery
- KAM_MC66_mains
- RAY_HEAT
- FLYPPER
- GMC_Ux_EMeter
- HYDRUS
- SHARKY_HEAT
- ENERGY-INT6
- SHARKY_775
- SCYLAR_INT-8
- Brunata_HGO_HGW
- INFOCAL-5
- ENERGY-INT5

13 IZAR RADIO

13.1 General

All the configurations you can execute with IZAR@SET in connection with the radio module IZAR RADIO and the opto head are described in this chapter.

You will find additional information for the device or the opto head in the separate instruction manuals. If these are not available, you can download them from the Diehl Metering Homepage.

Please enter the following address in your browser:

http://www.diehl.com/de/diehl-metering.html

Under the heading "Products & Solutions" \ "Product-Download" an overview opens, where you can find all available documents for downloading.

The following requirements must be met:

- Your device is connected to IZAR@SET (for more information refer to ”3.4 Connecting devices to IZAR@SET” on page 18.)

13.2 Tabs

This chapter describes which configurations you can execute on which authorization level.

Depending on the access level you have:

- read-only access rights 🕮
- writing access ☑

As soon as your device is connected to IZAR@SET, the device-specific tabs are shown.

Depending on individual configurations further definition options are enabled.

If different settings are available, it is also necessary to enter values. In this case, the input fields are marked in YELLOW.

13.3 IZAR RADIO COMPACT Inductive

The radio module sends automatically every 64 seconds the number of the meter, the count as well as other operation information.
The capturing of the data can be done by a mobile or stationary receiver.

The tab "All parameters" shows you all the info regarding the connected device.

Contents

- Common
- Radio
- Due date
- Meter
- Pulse
- Alarms

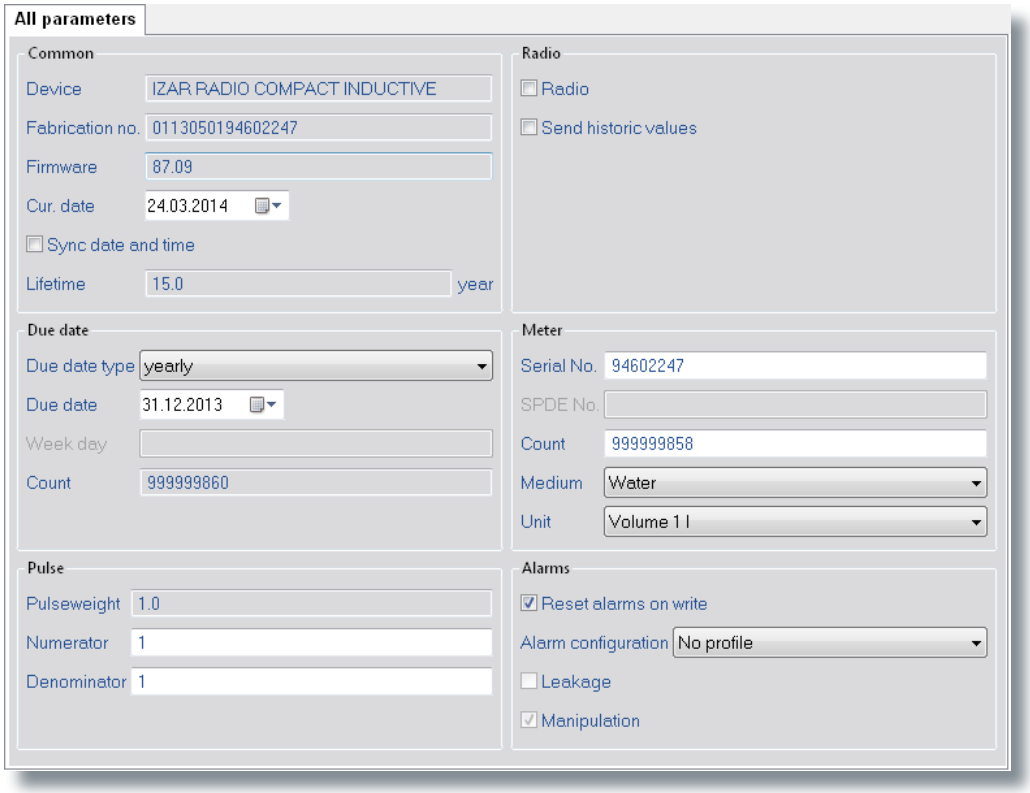


Fig. 92 : Tab "All parameters"

13.3.1 Common

Fig. 93 : Section "Common"

Here you receive general information about the connected device (type of device, fabrication number, firmware, lifetime).

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Cur. Date	Entry of an optional date	🕮	☑	☑
Sync. date and time	When saving, the date of the device is synchronized with the date of the PC.	☑		

13.3.2 Radio

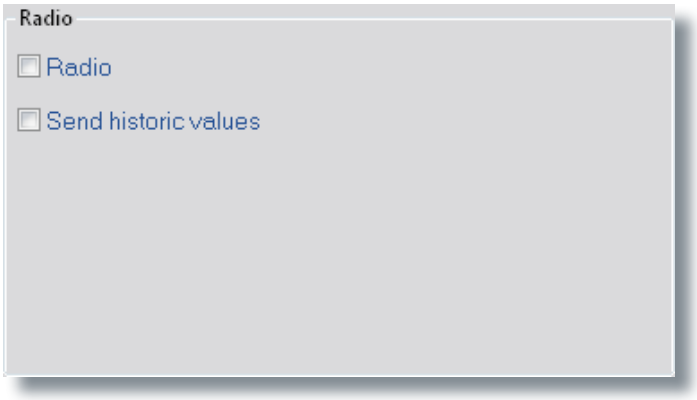


Fig. 94 : Section "Radio"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Radio	Activating and deactivating of the radio. If the radio is deactivated, the device stays fully operational.	🕮	☑	☑
Send historic values	For the activation of the radio telegram with 3 due date values (otherwise only one due date will be sent)			

13.3.3 Due date

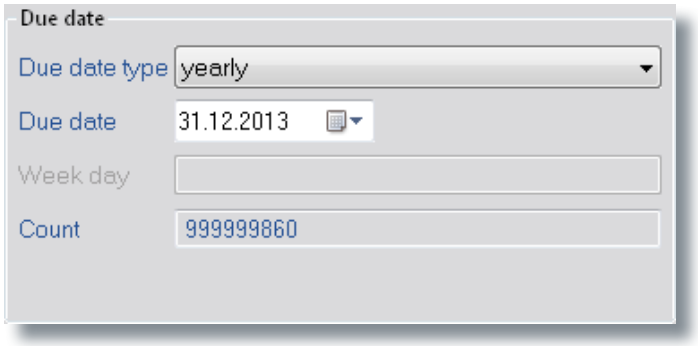


Fig. 95 : Section "Due date"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Due date	Definition of the period of time or the day when the values will be captured. The following can be selected: ■ Off ■ Yearly ■ Monthly ■ Weekly	🕮	☑	☑

13.3.4 Meter

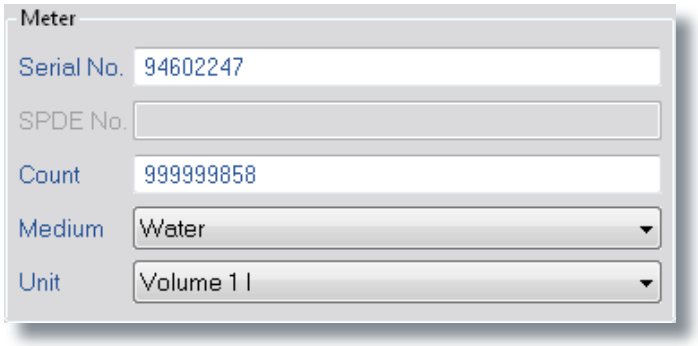


Fig. 96 : Section "Meter"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Serial No.	Entry of the serial number of the connected device	🕮	☑	☑
Count	Entry of the current count			
Medium	Selection of the medium to be measured			
Unit	Selection of the unit according to the medium to be measured			

Medium The following media can be selected in the expert or test lab level:

- A/D-converter
- bidirectional repeater
- breaker (elec.)
- calorific value
- carbon dioxide
- cold water
- communication controller
- compressed air
- cooling Meter forward
- cooling Meter reverse
- customer unit
- double measurement value (warm/ cold) water meter electricity
- garbage
- gas
- gas detector
- heat
- heat-/cooling meter
- heat cost allocator
- heater forward
- hot water (≥ 90 °C)
- oil
- other medium
- pressure
- radio converter system side
- reserved
- valve (gas or water)
- romsensor
- smoke detector
- steam
- bus/system component
- unidirectional repeater
- unknown medium
- hot water (30 °C … 90 °C)
- sewage
- water

Unit The following units can be selected in the expert or test lab level:

- energy 0.001 Wh … 100,000 Wh
- energy 1 J … 100,000,000 J
- volume 0.001 l … 100,000 l
- mass 1 g … 100,000 g
- mass 1,000,000 TON … 1,000,000,000,000,000 TON
- duty factor 1 s
- duty factor 1 min
- duty factor 1 h
- duty factor 1 d
- operating time 1 s
- operating time 1 min
- operating time 1 h
- operating time 1 d
- power 0.001 W … 100,000 W
- power 1 J/h … 100,000,000 J/h
- flow 0.001 l/h … 100,000 l/h
- flow 0.0001 l/min …10,000 l/min
- flow 0.000001 l/s … 100 l/s
- mass flow 1 g/h ... 100,000,000 g/h
- flow temperature 0.001 °C … 10 °C
- return flow temperature 0.001 °C … 10 °C
- temperature difference 0.0001 K … 10 K
- ambient temperature 0.001 °C … 10 °C
- pressure 0.001 bar … 10 bar
- heat cost allocator 1
- average duration 1 s
- average duration 1 min
- average duration 1 h
- average duration 1 d
- current duration 1 s
- current duration 1 min
- current duration 1 h
- current duration 1 d
- fabrication no.
- (extended) identification 1
- bus address 1
- any VIF 1
- manufacturer specific
- UNKNOWN 1 s

13.4 IZAR RADIO COMPACT 868 ACM

The tab "All parameters" shows you all the info regarding the connected device.

Contents

- Common
- Radio
- Due date
- Meter
- Numbers

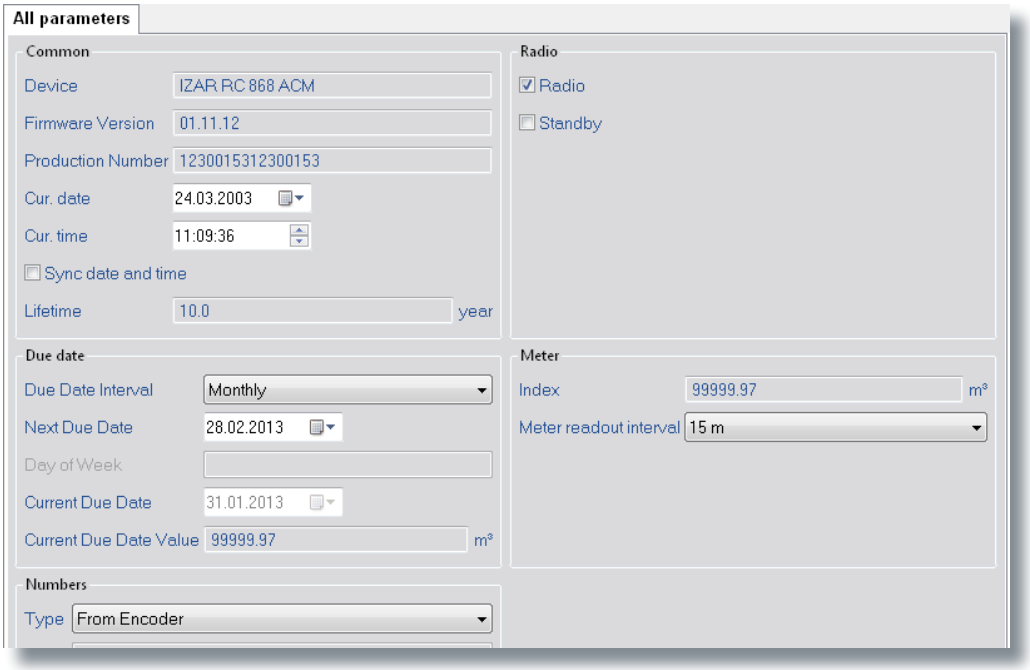


Fig. 97 : Tab "All parameters"

13.4.1 Common

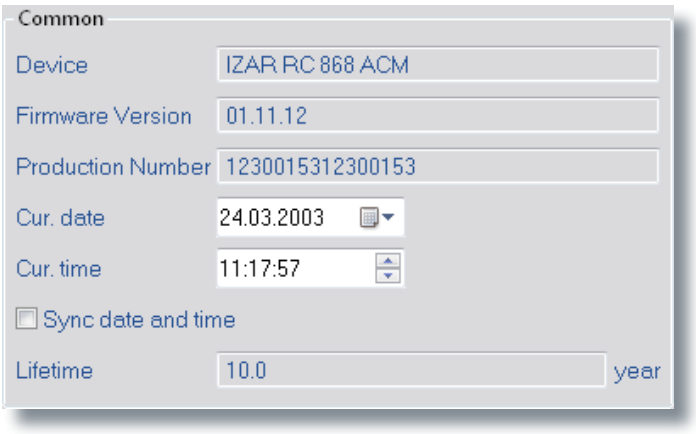


Fig. 98 : Section "Common"

Here you receive general information about the connected device (type of device, firmware, production number, lifetime).

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Current Date	Entry of an optional date	🕮	☑	☑
Current Time	Input of an optional time			
Sync. date and time	When saving, the date of the device is synchronized with the date of the PC.			

13.4.2 Radio

Fig. 99 : Section "Radio"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Radio	Activating and deactivating of the radio. If the radio is deactivated, the device stays fully operational.	🕮	☑	☑
Standby	The device is now ready for delivery			

13.4.3 Due date

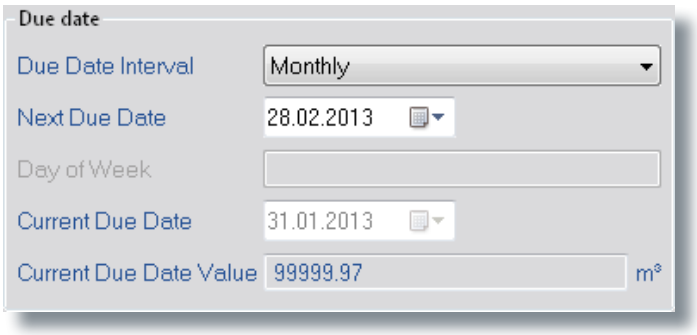


Fig. 100 : Section "Due date"

Here you get the measured value of the current due date.

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Due date	Definition of the period of time or the day when the values will be captured. The following can be selected: ■ Off ■ Yearly ■ Monthly ■ Weekly	🕮	☑	☑

13.4.4 Meter

Fig. 101 : Section "Meter"

Here you get the current meter reading of the connected meter.

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Readout interval	Selection how often the radio module reads the connected meter (from 15 minutes up to 12 hours can be set)	🕮	☑	☑

The shorter the duration of the read interval is set, the sooner ends the lifetime of the radio module.

13.4.5 Numbers

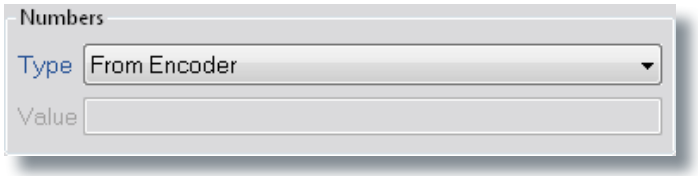


Fig. 102 : Section "Numbers"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Type	Selection of an individual number type: ■ From Encoder ■ Meter point ID ■ Ownership Number	🕮	☑	☑
Value	Input of an individual device number which should be transferred via radio			

13.5 IZAR RADIO EXTERN SCR

The radio module sends automatically every 15 seconds the number of the meter, the count as well as other operation information.
The capturing of the data can be done by a mobile or stationary receiver.

The tab "All parameters" shows you all the info regarding the connected device.

Contents

- Common
- Radio
- Due date
- Meter
- Alarms

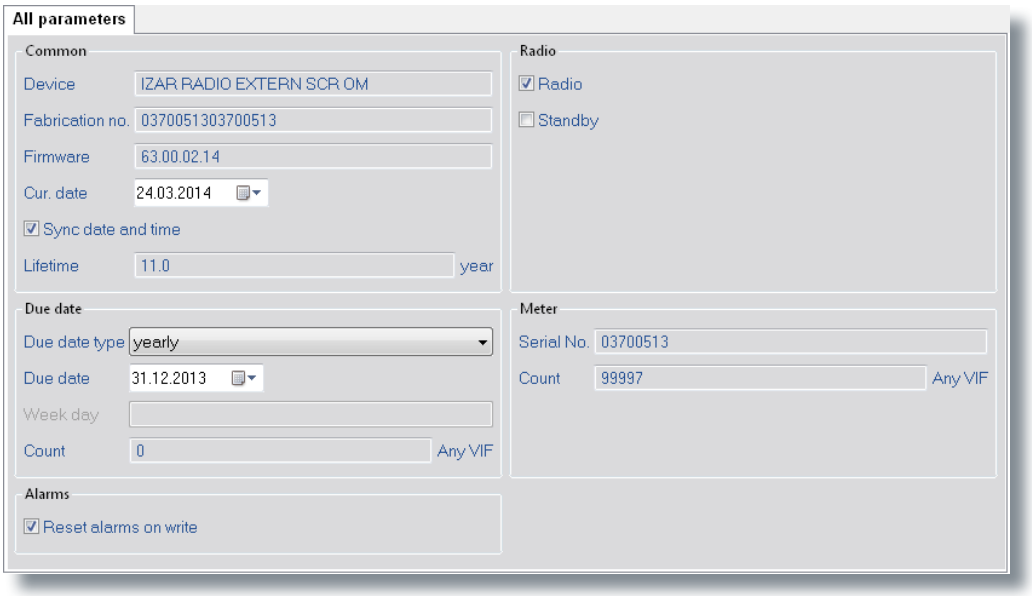


Fig. 103 : Tab "All parameters"

13.5.1 Common

Fig. 104 : Section "Common"

Here you receive general information about the connected device (type of device, fabrication number, firmware, lifetime).

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Cur. Date	Entry of an optional date	🕮	☑	☑
Sync. date and time	When saving, the date of the device is synchronized with the date of the PC.			

13.5.2 Radio

Fig. 105 : Section "Radio"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Radio	Activating and deactivating of the radio. If the radio is deactivated, the device stays fully operational.	🕮	☑	☑
Standby	The device is now ready for delivery			

13.5.3 Due date

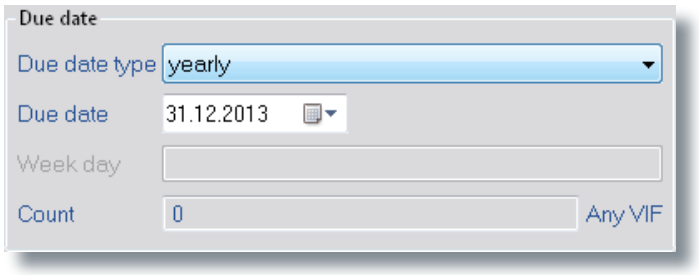


Fig. 106 : Section "Due date"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Due date	Definition of the period of time or the day when the values will be captured. The following can be selected: ■ Yearly ■ Monthly ■ Weekly	🕮	☑	☑

13.5.4 Meter

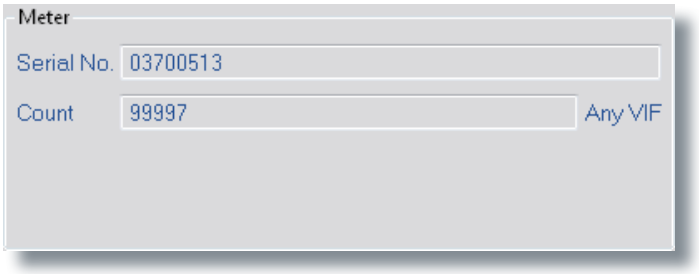


Fig. 107 : Section "Meter"

Here you get the information about the serial number and the current count of the connected device.

13.5.5 Alarms

Fig. 108 : Section "Alarms"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Reset alarms on write	Reset of the upcoming alarms	🕮	☑	☑

13.6 IZAR RADIO EXTERN M-Bus

The radio module sends automatically every 8 ... 16 seconds the number of the meter, the meter reading as well as other operation information.
The capturing of the data can be done by a mobile or stationary receiver.

The tab "All parameters" shows you all the info regarding the connected device.

Contents

- Common
- Radio
- Meter

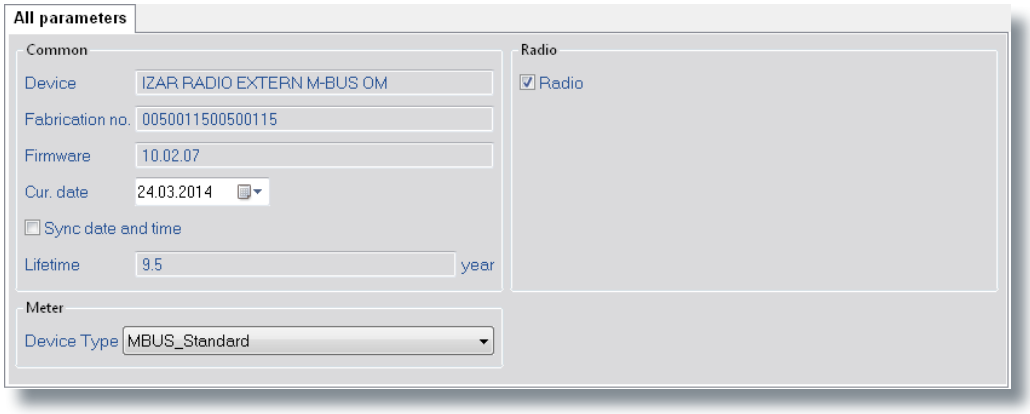


Fig. 109 : Tab "All parameters"

13.6.1 Common

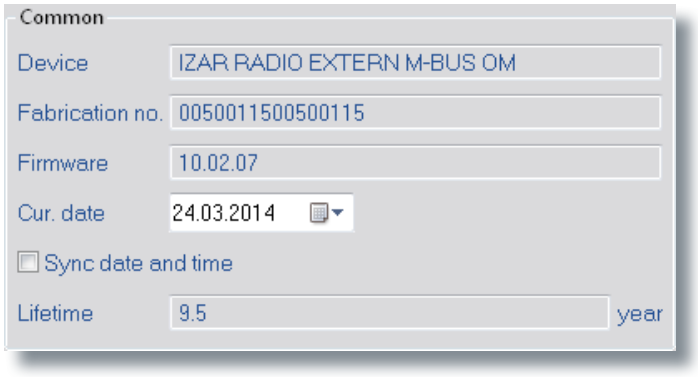


Fig. 110 : Section "Common"

Here you receive general information about the connected device (type of device, fabrication number, firmware, lifetime).

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Cur. Date	Entry of an optional date	📖	☑	☑
Sync. date and time	When saving, the date of the device is synchronized with the date of the PC.			

13.6.2 Radio

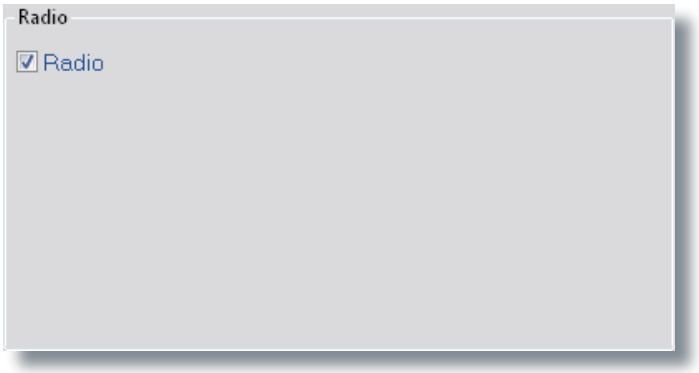


Fig. 111 : Section "Radio"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Radio	Activating and deactivating of the radio. If the radio is deactivated, the device stays fully operational.	🕮	☑	☑

13.6.3 Meter

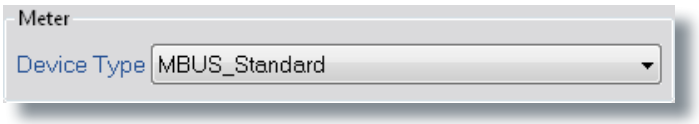


Fig. 112 : Section "Meter"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Device Type Device	Selection of connected devices	🕮	☑	☑

The following devices can be selected in the Expert or Test Lab level:

- MBUS_Pollustat
- MBUS_MWZ03
- MBUS_F4_Calculator
- MBUS_Standard

13.7 IZAR RADIO Segment

The radio module sends automatically every 128 seconds the number of the meter, the count as well as other operation information of the AQUARIUS S.
The capturing of the data can be done by a mobile or stationary receiver.

13.7.1 Tab "All parameters"

The tab "All parameters" shows you all the info regarding the connected device.

Contents

- Common
- Radio
- Due date
- Meter
- Pulse
- Alarms

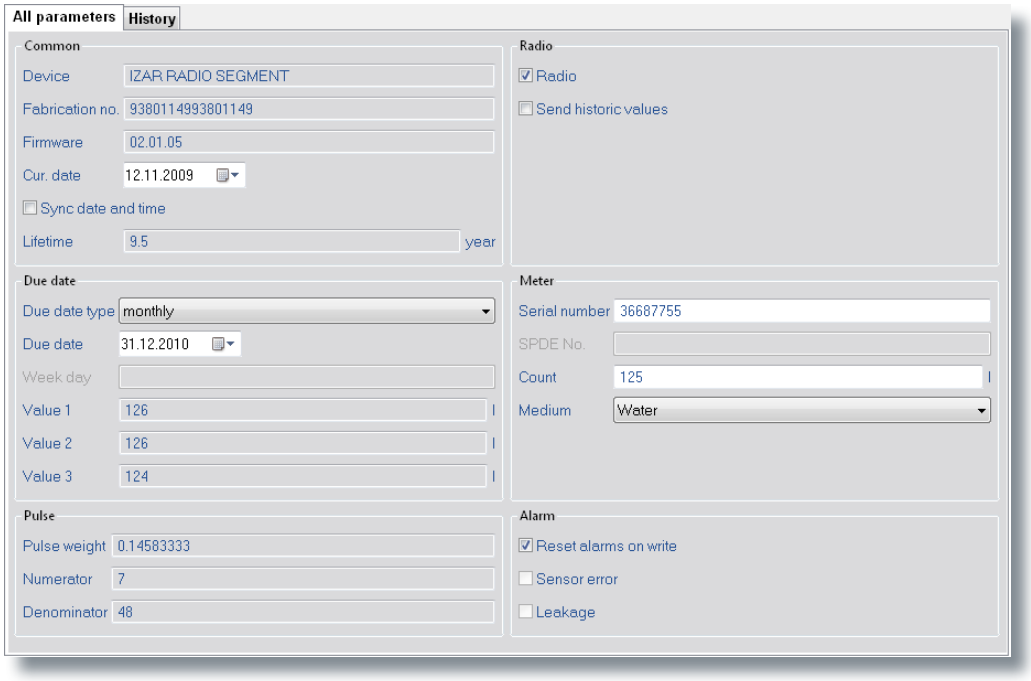


Fig. 113 : Tab "All parameters"

13.7.1.1 Common

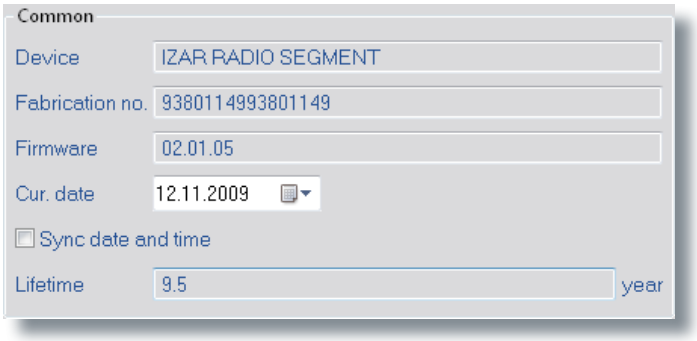


Fig. 114 : Section "Common"

Here you receive general information about the connected device (type of device, fabrication number, firmware, lifetime).

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Cur. Date	Entry of an optional date	🕮	☑	☑
Sync. date and time	When saving, the date of the device is synchronized with the date of the PC.			

13.7.1.2 Radio

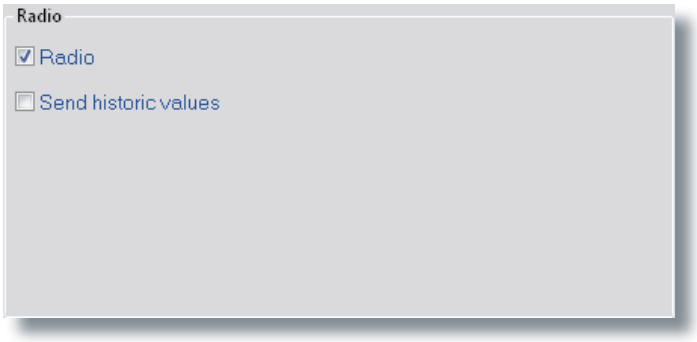


Fig. 115 : Section "Radio"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Radio	Activating and deactivating of the radio. If the radio is deactivated, the device stays fully operational.	🕮	☑	☑
Send historic values	For the activation of the radio telegram with 3 due date values (otherwise only one due date will be sent)			

13.7.1.3 Due date

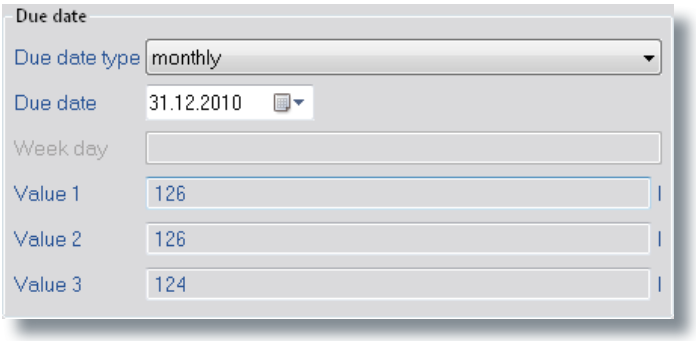


Fig. 116 : Section "Due date"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Due date type / Due date	Definition of the period of time or the day when the values will be captured. The following can be selected: ■ Yearly ■ Monthly ■ Weekly	🕮	☑	☑

13.7.1.4 Meter

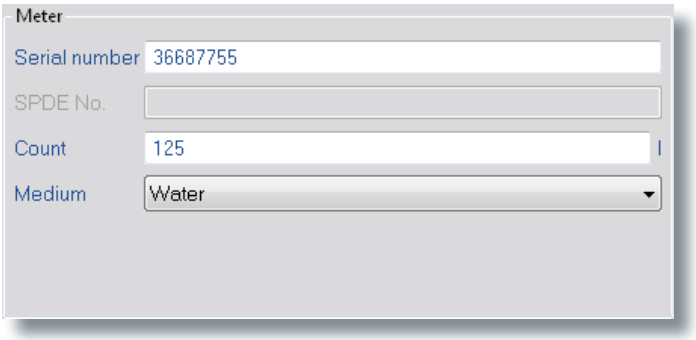


Fig. 117 : Section "Meter"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Serial No.	Entry of the serial number of the connected device	🕮	☑	☑
Count	Entry of the current count			
Medium	Selection of the medium to be measured ■ Water ■ Hot water			

13.7.1.5 Pulse

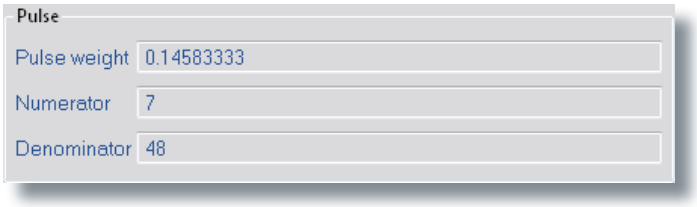


Fig. 118 : Section "Pulse"

Here you receive information about the pulse value of the connected device.

13.7.1.6 Alarms

Fig. 119 : Section "Alarms"

All upcoming alarms are shown in this section.

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Reset alarms on write	Reset of the upcoming alarms	🕮	☑	☑

13.7.2 History

The tab "History" shows the most recent measurement values according to the selected due date type.

Fig. 120 : Tab "History"

13.8 IZAR RADIO Extend

The IZAR RADIO Extend sends automatically (repeatedly) (e.g. every 15 sec.) the radio telegram(s) of the meter to be retransmitted.

The capturing of the data can be done by a mobile or stationary receiver (e.g. IZAR RDC Premium).

The IZAR RADIO Extend only supports Single-Hop and is not allowed to reinforce IZAR RADIO Extend.

13.8.1 Common

The tab "All parameters" shows you all the info regarding the connected device.

Contents

- Device
- Firmware Version
- Serial number
- MBR Version
- Current Temperature
- Lifetime
- Date, Time

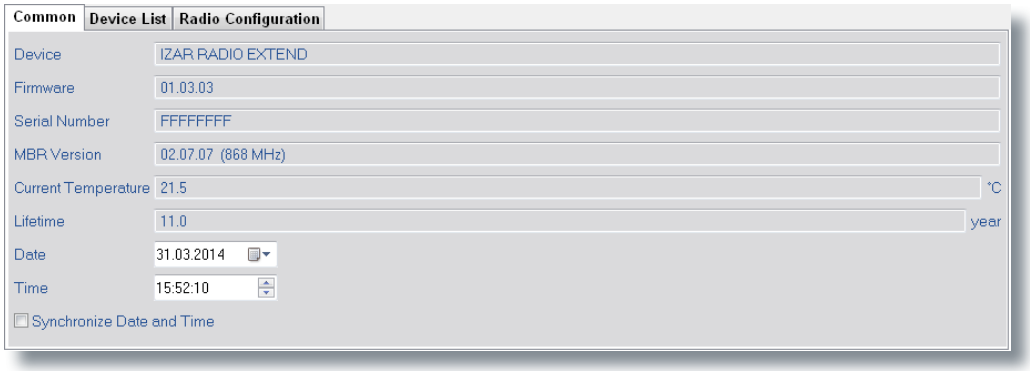


Fig. 121 : Section "Common"

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Date / time	Entry of an optional date / time	🕮	☑	☑
Synchronize time and date	When saving, the date of the device is synchronized with the date of the PC.			

13.8.2 Device List

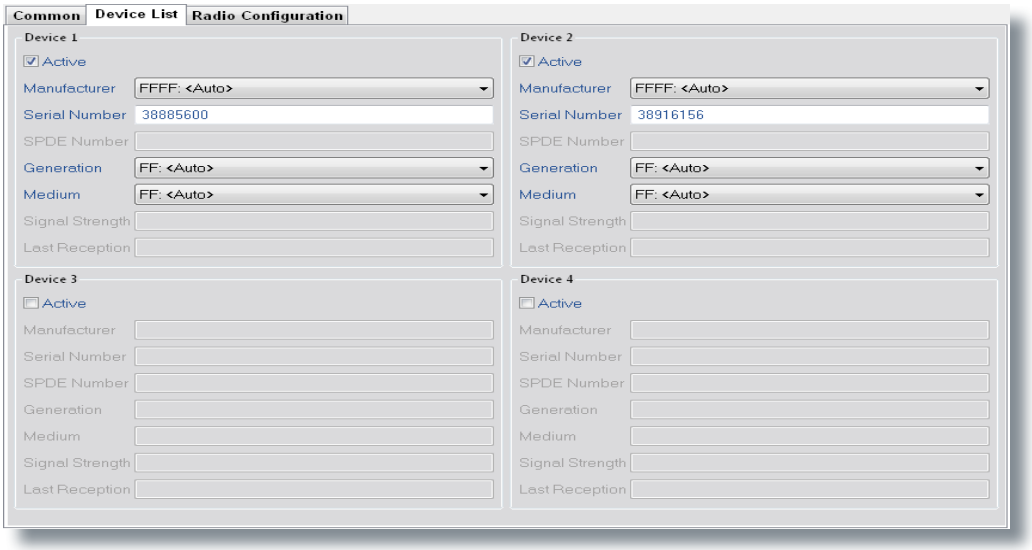


Fig. 122 : Section "Device List - Auto"

Up to 4 meters can be activated in the device list. The meter can be automatically retransmitted by the IZAR RADIO Extend via the input of the serial number. Regarding manufacturer, generation and medium the selection "<Auto>" is sufficient.

First the manufacturer "SAP: Sappel" has to be selected, in order to enter the SPDE-addressing.

If the serial number in the reception area of the IZAR RADIO Extend is assigned several times, they can be distinguished individually by entering manufacturer, generation and medium.

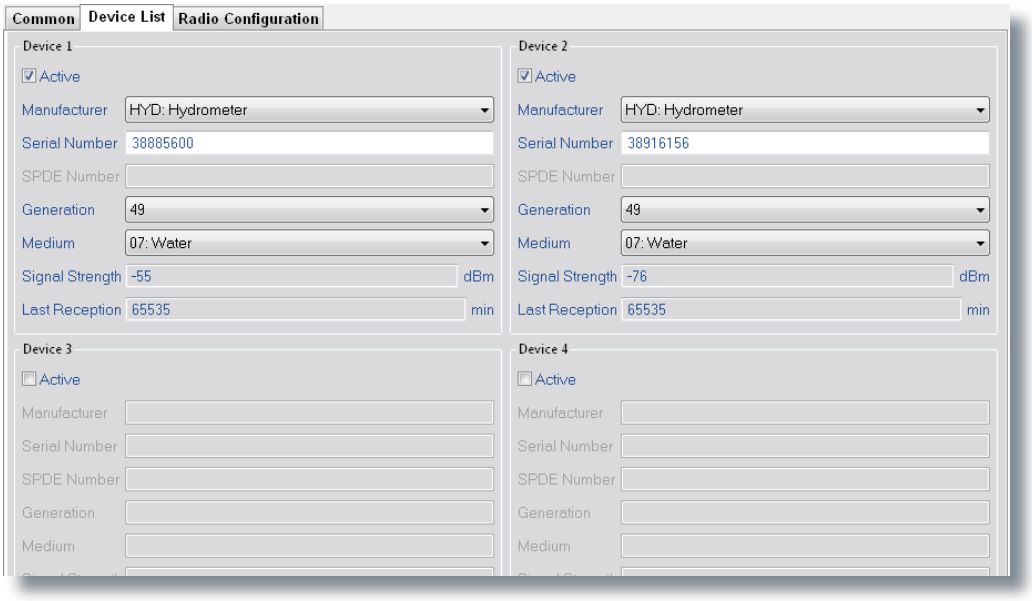


Fig. 123 : Section "Device List"

After IZAR RADIO Extend has received radio telegrams, these will be retransmitted. It becomes evident by reading out the device list, which meter has received most recently and also the reception quality (field intensity) of the meter. If the field intensity is greater than -85 dBm (e.g. -73 dBm), it can be described as good reception. If the field intensity is smaller than -100 dBm (e.g. -104 dBm) the IZAR RADIO Extend is possibly no longer able to receive radio telegrams.

The IZAR RADIO Extend adds automatically manufacturer, generation and medium after the first reception of the meter.

13.8.3 Radio Configuration

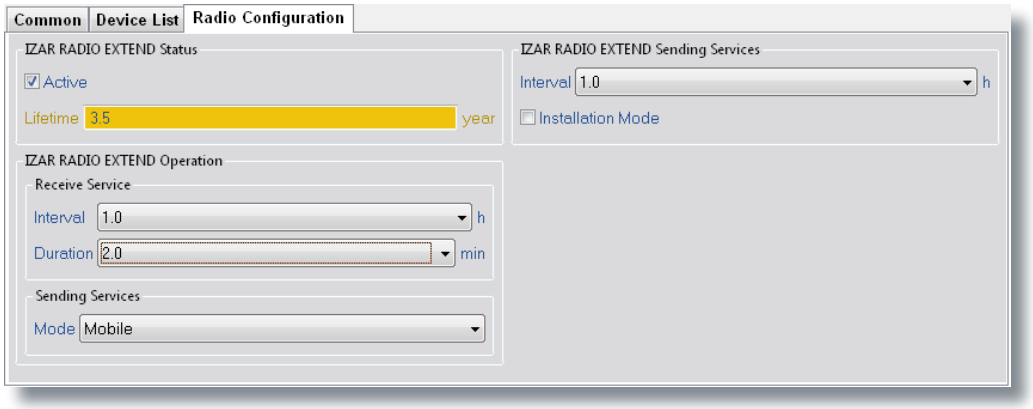


Fig. 124 : Section "Radio Configuration"

IZAR RADIO Extend Status

By activating IZAR RADIO Extend, the receipt and sending service are activated. IZAR@SET updates automatically battery life in years when radio is activated or deactivated.

Battery life depends on temperature, mode of sending service, logging interval, reception period of the receiving meter and the actual receipt. The calculation is very reliable, since the practical application of the IZAR RADIO Extend can be operated up to 30 % longer. The higher life span results from the partially sooner reception of retransmitted meters.

Configuration overview

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Active	Activating and deactivating of the radio. If the radio is deactivated, the device stays fully operational.	🕮	☑	☑

IZAR RADIO Extend Sending service

The device sends according to pre-set intervals in the sending service its own radio telegram where the retransmitted meter, their field intensity and temperature can be found.

According to OMS-S one installation telegram will be sent every 45 minutes for 6 hours in the installation mode.

The mode can be activated additionally, if there are devices which process these installation telegrams.

The IZAR RADIO Extend only supports Single-Hop and is not allowed to reinforce IZAR RADIO Extend.

IZAR RADIO Extend Operation

It is recommended regarding the reception period, to choose the setting this way, so that the radio telegram of the retransmitted meter is received twice.

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Sending service Interval	The participants to be retransmitted are logged according to a definable interval (between 15 minutes and 24 hours).	🕮	☑	☑
Sending service Duration	The reception period can be set between 30 seconds and 15 minutes.	🕮	☑	☑

Designation	Description	Authorization		
		Standard	Expert	Test Lab
Sending services	■ Mobile The device sends successively, depending on the telegram length, every 8...30 seconds all retransmitted meters. ■ Stationary Network The device transfers successively, depending on the selected time interval, six times all retransmitted meters and stops till the next transmission time.	🕮	☑	☑

Retransmitted participant	Typical radio period
IZAR RADIO EXTERN M-BUS	8 … 16 s
IZAR RADIO EXTERN SCR	15 s
IZAR RADIO EXTERN L-BUS/RS232	8 … 16 s
IZAR RADIO EXTERN PULSE	8 s
IZAR RADIO COMPACT INDUCTIVE	8 s
IZAR RADIO COMPACT ACM	10 s
IZAR RADIO SEGMENT	128 s
HYDRUS	8 s
CORONA ER	64 s
AERIUS	10 s … 1 hour
SHARKY 775 (D-cell)	12 s
SHARKY 775 (A-cell)	180 s
RAY	64 s

Lifetime The following tables show the life time in years, regarding the Mode Mobile and Stationary Network.

Mode Mobile

Interval	Duration		
	30 sec	60 sec	120 sec
15 min	3	1.5	0.5
30 min	5.5	3	1.5
1 h	8.5	5.5	3
2 h	12.5	8.5	5.5
3 h	15	11	7
6 h	15	15	11
12 h	15	15	15
24 h	15	15	15

Mode Stationary Network

Interval	Duration		
	30 sec	60 sec	120 sec
15 min	3	1.5	0.5
30 min	6	3	1.5
1 h	10	6	3
2 h	15	10	6
3 h	15	13.5	8
6 h	15	15	13.5
12 h	15	15	15
24 h	15	15	15

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